Dolola


```
=> fil reg
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                 ENTRY    SESSION
FULL ESTIMATED COST                               0.21       0.21

FILE 'REGISTRY' ENTERED AT 07:29:20 ON 24 JUN 2005
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:   23 JUN 2005  HIGHEST RN 852898-09-0
DICTIONARY FILE UPDATES:  23 JUN 2005  HIGHEST RN 852898-09-0

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

*************************************************************************
*                                                                       *
* The CA roles and document type information have been removed from     *
* the IDE default display format and the ED field has been added,       *
* effective March 20, 2005.  A new display format, IDERL, is now        *
* available and contains the CA role and document type information.     *
*                                                                       *
*************************************************************************

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

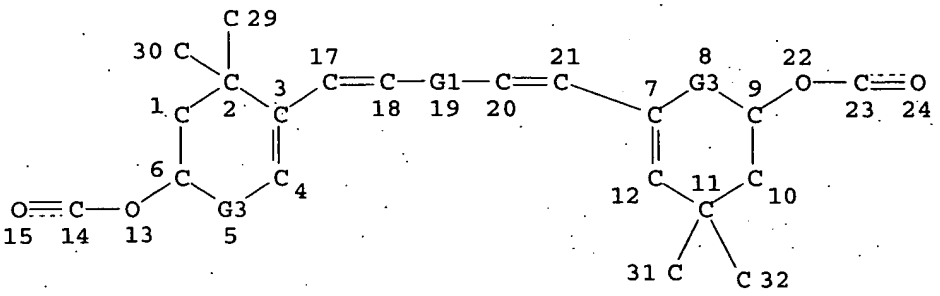
=> e carotenoid ester/cn 5
E1            1     CAROTENOID CLEAVAGE DIOXYGENASE 1 (PETUNIA HYBRIDA STRAIN MI
                    TCHELL GENE CCD1)/CN
E2            1     CAROTENOID DEHYDROGENASE ( SECRETED PROTEIN) (STREPTOMYCES C
                    OELICOLOR STRAIN A3(2) GENE SC4A10.34)/CN
E3            0 --> CAROTENOID ESTER/CN
E4            1     CAROTENOID F348/CN
E5            1     CAROTENOID F371/CN

=> e carotenoid/cn 5
E1            1     CAROTENES AND CAROTENOIDS/CN
E2            1     CAROTENES, BACTERIORUBERINS/CN
E3            0 --> CAROTENOID/CN
E4            1     CAROTENOID 3,(3')-B-IONONE RING HYDROXYLASE/CN
E5            1     CAROTENOID 3,4-DESATURASE/CN

=> => d l3 que stat
L1              STR
```

Prepared by: Mary Hale @2-2507 Rem Bldg 1D86

C=O C=C
@25 26 @27 @28



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GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 31

STEREO ATTRIBUTES: NONE
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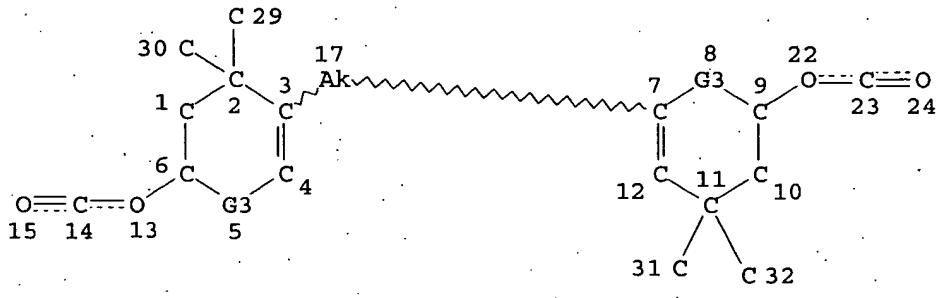

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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

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NUMBER OF NODES IS 25

STEREO ATTRIBUTES: NONE
L6 0 SEA FILE=REGISTRY SSS FUL L4

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L7 STR

C═O
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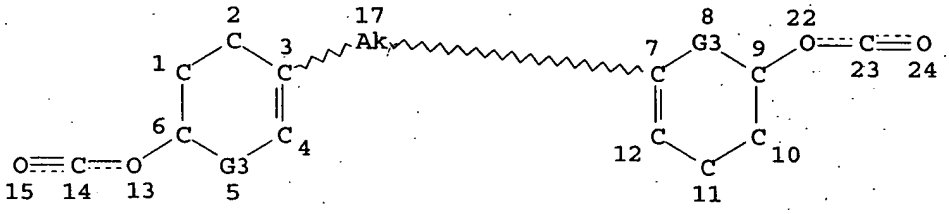

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STEREO ATTRIBUTES: NONE
L9 5 SEA FILE=REGISTRY SSS FUL L7

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SEARCH TIME: 00.00.01

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	488.72	488.93

FILE 'CAPLUS' ENTERED AT 07:37:54 ON 24 JUN 2005
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FILE COVERS 1907 - 24 Jun 2005 VOL 143 ISS 1
FILE LAST UPDATED: 23 Jun 2005 (20050623/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

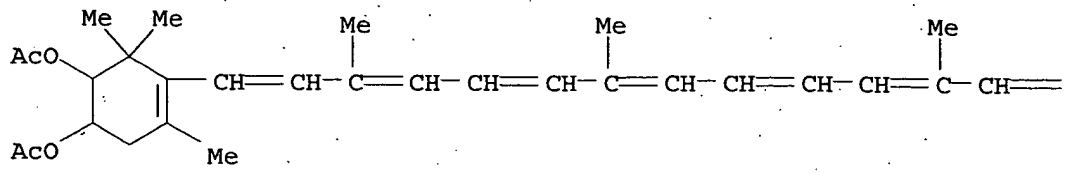
This file contains CAS Registry Numbers for easy and accurate substance identification.

L10 3 L9

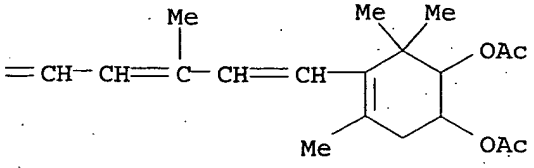
=> d 1-3 ibib abs hitstr

L10 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1986:606472 CAPLUS
DOCUMENT NUMBER: 105:206472
TITLE: Animal carotenoids. Part 30. Carotenoids of the sponge Polymastia granulosa (Hadromerida)
AUTHOR(S): Hertzberg, Sissel; Englert, Gerhard; Bergguist, Patricia; Liaaen-Jensen, Synnoeve
CORPORATE SOURCE: Norweg. Inst. Technol., Univ. Trondheim, Trondheim, N-7034, Norway
SOURCE: Bulletin des Societes Chimiques Belges (1986), 95(9-10), 801-14
CODEN: BSCBAG; ISSN: 0037-9646
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB The quant. carotenoid composition of P. granulosa was determined by methods including TLC, HPLC, visible spectroscopy, 1H-NMR, and mass spectroscopy. Isorenieracistene (7-cis-.vphi.,.vphi.-carotene) (I) was the major carotenoid and was further characterized by 2-dimensional (2D) 1H-NMR (400 MHz) and isomerization studies. Its stability is discussed. The 1H-NMR spectrum of 7,9'-di-cis-isorenieratene, a likely isolation artifact, was fully assigned by 1-dimensional Double Indor Difference expts. and 2D 1H-NMR. All 3 reports on Δ7-cis aryl carotenes concern sponges of the order Hadromerida. Possible cis hydrogenation of algal carotenoid precursors is considered. The background information on natural carotenoids (new aspects), NMR spectroscopy of carotenoids (present status), and sponge chemosystematics, relevant to the present study, is briefly reviewed.
IT **63109-38-6**
RL: BIOL (Biological study))
RN 63109-38-6 CAPLUS
CN β,β-Carotene-2,2',3,3'-tetrol, tetraacetate, (2R,2'R,3R,3'R)- (9CI) (CA INDEX NAME)

PAGE 1-A

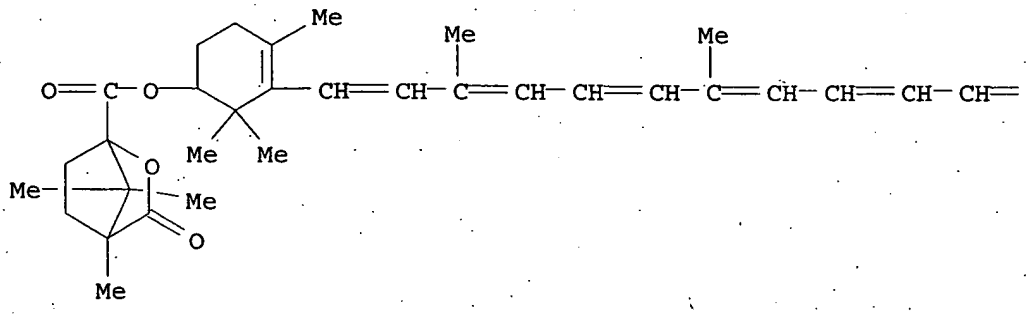


PAGE 1-B



L10 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1983:72489 CAPLUS
DOCUMENT NUMBER: 98:72489
TITLE: Determination of enantiomeric composition of partly racemized carotenols
AUTHOR(S): Aareskjold, Kaare; Liaaen-Jensen, Synnoeve
CORPORATE SOURCE: Norw. Inst. Technol., Univ. Trondheim, Trondheim, N-7034, Norway
SOURCE: Acta Chemica Scandinavica, Series B: Organic Chemistry and Biochemistry (1982), B36(8), 499-504
CODEN: ACBOCV; ISSN: 0302-4369
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Methods for determining the enantiomeric composition of various racemized carotenols by converting them into diastereomeric esters with subsequent anal. have been studied. Diastereomeric esters of (-)-camphanic acid with carotenols other than α-ketols could not be separated by HPLC. No separation was achieved for diastereomeric esters of MeOCPh(CF3)CO2H (I). 1H NMR anal. in the presence of Eu(fod)3 of diastereomeric I esters allowed quant. determination of the enantiomeric composition of carotenols with 2-hydroxy-β- and 3-hydroxy-β-type end groups.
IT **84365-26-4P 84414-94-8P 84414-95-9P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and enantiomeric determination of diastereomeric mixts. containing)
RN 84365-26-4 CAPLUS
CN β,β-Carotene-3,3'-diol, bis(4,7,7-trimethyl-3-oxo-2-oxabicyclo[2.2.1]heptane-1-carboxylate), [3R(1S,4R),3'R(1S,4R)]- (9CI) (CA INDEX NAME)

PAGE 1-A



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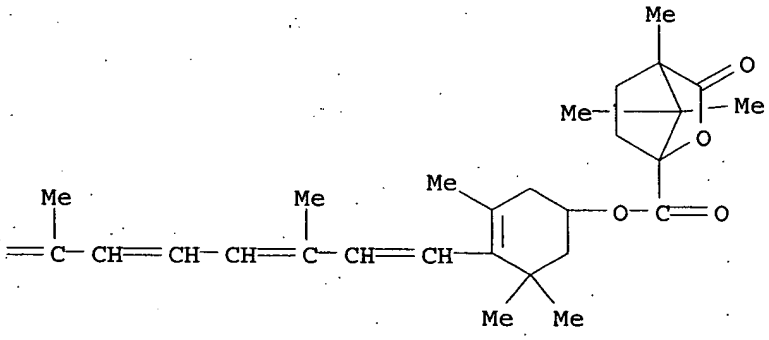
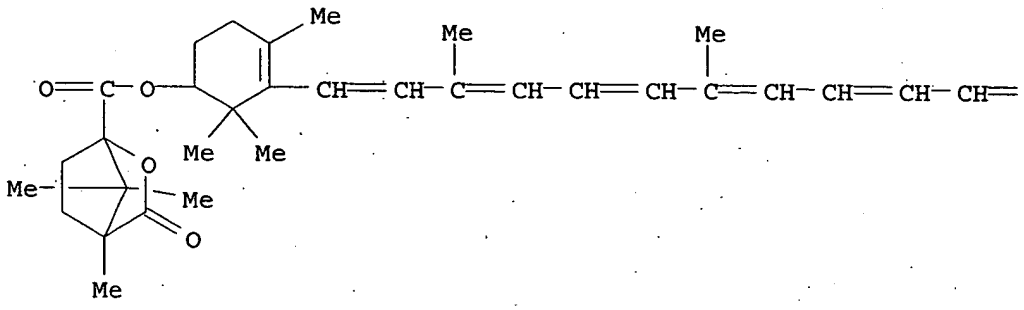


RN 84414-94-8 CAPLUS
CN β,β-Carotene-3,3'-diol, bis(4,7,7-trimethyl-3-oxo-2-oxabicyclo[2.2.1]heptane-1-carboxylate), [3R(1S,4R),3'S(1S,4R)]- (9CI) (CA INDEX NAME)

PAGE 1-A



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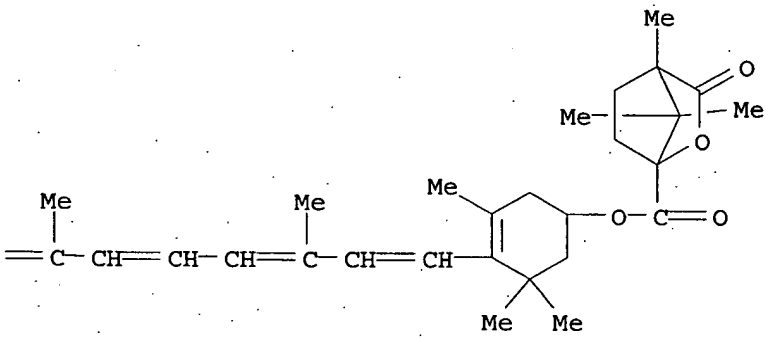
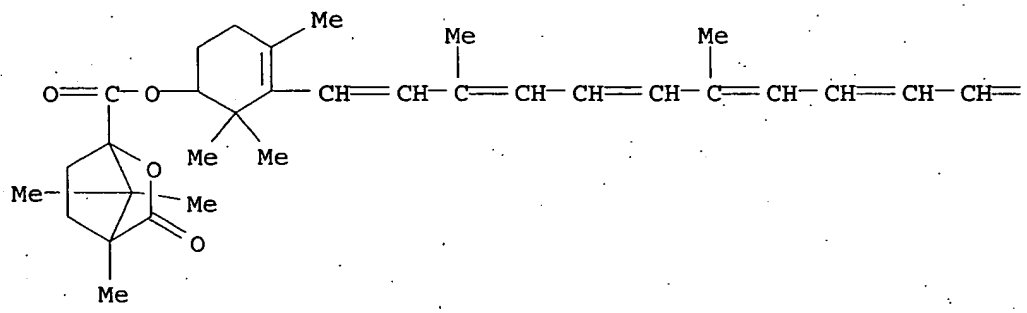


RN 84414-95-9 CAPLUS
CN β,β-Carotene-3,3'-diol, bis(4,7,7-trimethyl-3-oxo-2-oxabicyclo[2.2.1]heptane-1-carboxylate), [3S(1S,4R),3'S(1S,4R)]- (9CI) (CA INDEX NAME)

PAGE 1-A



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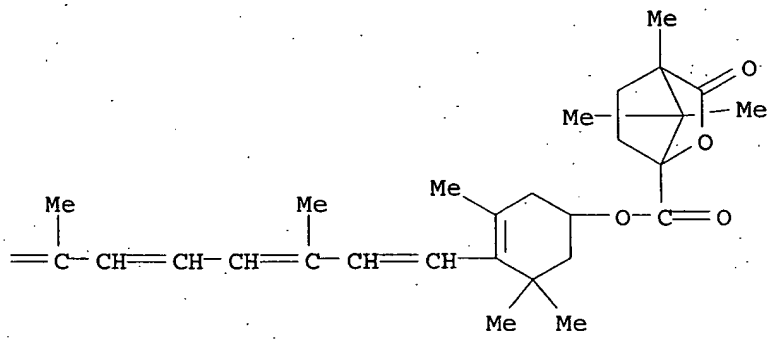


L10 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1977:171646 CAPLUS
DOCUMENT NUMBER: 86:171646
TITLE: Carotenoids of Rhizobia. I. New carotenoids from Rhizobium lupini
AUTHOR(S): Kleinig, Hans; Heumann, Wolfram; Meister, Walter; Englert, Gerhard
CORPORATE SOURCE: Inst. Biol. II, Univ. Freiburg, Freiburg/Br., Fed. Rep. Ger.
SOURCE: Helvetica Chimica Acta (1977), 60(1), 254-8
CODEN: HCACAV; ISSN: 0018-019X
DOCUMENT TYPE: Journal
LANGUAGE: English

AB 2,3,2',3'-Di-trans-tetrahydroxy-β,β-caroten-4-one and 2,3,2',3'-di-trans-tetrahydroxy-2,3,2'(or 3')-trihydroxy-, and 2,3,2'(or 3')-trihydroxy-β,β-carotene were isolated from R. lupini and their structures determined on the basis of their visible, NMR, and mass spectra.

IT **63109-37-5P 63109-38-6P**
RL: SPN (Synthetic preparation); PREP (Preparation)

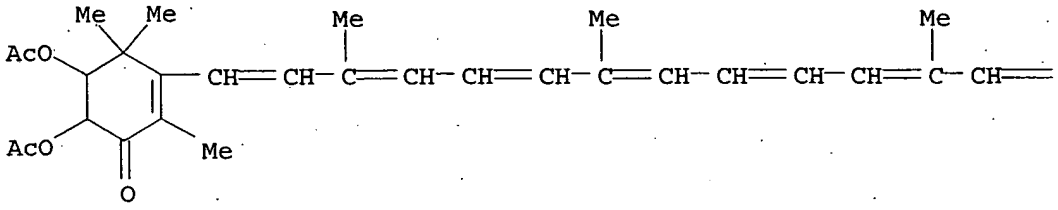
Prepared by: Mary Hale @2-2507 Rem Bldg 1D86

(preparation of)

RN 63109-37-5 CAPLUS

CN β,β-Caroten-4-one, 2,2',3,3'-tetrakis(acetyloxy)- (9CI) (CA INDEX NAME)

PAGE 1-A



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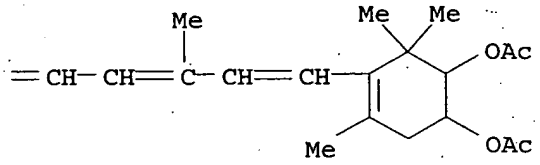
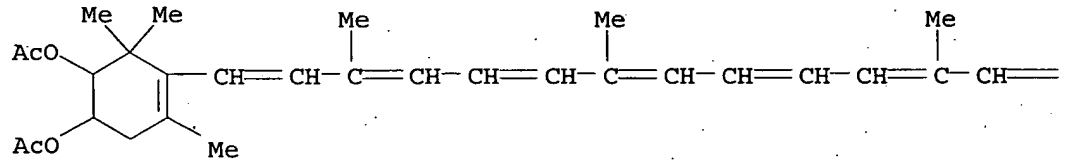


RN 63109-38-6 CAPLUS

CN β,β-Carotene-2,2',3,3'-tetrol, tetraacetate, (2R,2'R,3R,3'R)- (9CI) (CA INDEX NAME)

PAGE 1-A



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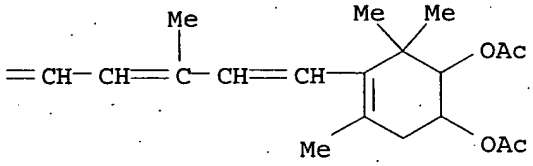

=> s (carotene or carotenoid) and (liver or hepatitis or hepatic? or cirrhosis)

28854 CAROTENE

20923 CAROTENES

39725 CAROTENE

(CAROTENE OR CAROTENES)

17849 CAROTENOID

23543 CAROTENOIDS

Prepared by: Mary Hale @2-2507 Rem Bldg 1D86

```
         28607 CAROTENOID
                 (CAROTENOID OR CAROTENOIDS)
        521337 LIVER
         34942 LIVERS
        524250 LIVER
                 (LIVER OR LIVERS)
         47852 HEPATITIS
             1 HEPATITISES
         47853 HEPATITIS
                 (HEPATITIS OR HEPATITISES)
        115369 HEPATIC?
         19045 CIRRHOSIS
             1 CIRRHOSISES
         19045 CIRRHOSIS
                 (CIRRHOSIS OR CIRRHOSISES)
L11       2474 (CAROTENE OR CAROTENOID) AND (LIVER OR HEPATITIS OR HEPATIC? OR
               CIRRHOSIS)

=> s l11(5a)(disease or dysfunct?) and (inhibit? or amelior?)
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L11(5A)(DISEASE'
        774179 DISEASE
        211952 DISEASES
        872017 DISEASE
                 (DISEASE OR DISEASES)
         46211 DYSFUNCT?
       1750709 INHIBIT?
         20935 AMELIOR?
L12         76 L11(5A)(DISEASE OR DYSFUNCT?) AND (INHIBIT? OR AMELIOR?)

=> s l12 and (treat? or therap? or prevent?)
       3204350 TREAT?
        420232 THERAP?
        799607 PREVENT?
L13         60 L12 AND (TREAT? OR THERAP? OR PREVENT?)

=> s l13 not l10
L14         60 L13 NOT L10

=> d 1-60 ibib abs;s fournier s?/au;s o'malley d?/au;s watumull d?/au;s jackson
h?/au;s nadolski g?/au

L14  ANSWER 1 OF 60  CAPLUS  COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER:         2005:453807  CAPLUS
DOCUMENT NUMBER:          142:482170
TITLE:                    Carotenoid analogs or derivatives for the
                          inhibition and amelioration of
                          disease
INVENTOR(S):              Lockwood, Samuel Fournier; O'Malley, Sean; Watumull,
                          David G.; Hix, Laura M.; Jackson, Henry; Nadolski,
                          Geoff
PATENT ASSIGNEE(S):       USA
SOURCE:                   U.S. Pat. Appl. Publ., 136 pp., Cont.-in-part of U.S.
                          Ser. No. 629,538.
                          CODEN: USXXCO
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   13
PATENT INFORMATION:
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US 2005113372	A1	20050526	US 2004-793670 ✓		20040304
US 2004162329	A1	20040819	US 2003-629538 ✓		20030729
US 2005037995	A1	20050217	US 2004-793703 ✓		20040304
US 2005065097	A1	20050324	US 2004-793696 ✓		20040304
US 2005075337	A1	20050407	US 2004-793702 ✓		20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P	20020729
			US 2003-467973P	P	20030505
			US 2003-472831P	P	20030522
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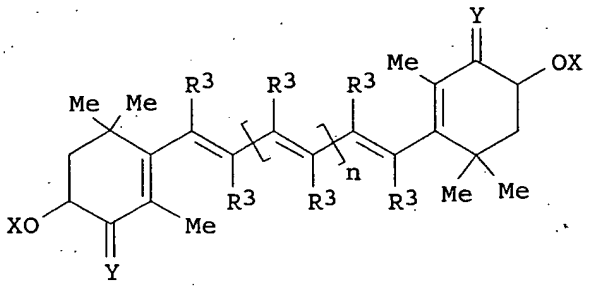

I

AB The preparation and evaluation of **carotenoid** derivs. I (R1, R2 = independently an acyclic alkene comprising at least one substituent, or a cyclic ring comprising at least one substituent; R3 = independently H or Me; n = 5-12) as antioxidants for the **treatment** of related **disease** is described. Thus, astaxanthin in CH2Cl2 was **treated** with DIPEA and succinic anhydride to yield the disuccinic ester.

L14 ANSWER 2 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER:	2005:451367 CAPLUS
DOCUMENT NUMBER:	142:476293
TITLE:	Substituted pyrimidine compositions and methods using them for the **treatment** of NGFI-B-related **diseases**
INVENTOR(S):	Martin, Richard; Mohan, Raju; Ordentlich, Peter
PATENT ASSIGNEE(S):	X-Ceptor Therapeutics, Inc., USA
SOURCE:	PCT Int. Appl., 117 pp. CODEN: PIXXD2
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	1
PATENT INFORMATION:	

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005047268	A2	20050526	WO 2004-US37642	20041109

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NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-519030P P 20031110

AB Compns. and methods using substituted pyrimidines are provided. The substituted pyrimidines may be used to **treat diseases** modulated by NGFI-B family activity.

L14 ANSWER 3 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:447673 CAPLUS
TITLE: Differentially expressed gene profile for diagnosing and **treating** mental disorders
INVENTOR(S): Akil, Huda; Atz, Mary; Bunney, William E., Jr.; Choudary, Prabhakara V.; Evans, Simon J.; Jones, Edward G.; Li, Jun; Lopez, Juan F.; Myers, Richard; Thompson, Robert C.; Tomita, Hiroaki; Vawter, Marquis P.; Watson, Stanley
PATENT ASSIGNEE(S): The Board of Trustees of the Leland Stanford Junior University, USA
SOURCE: PCT Int. Appl., 226 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005046434	A2	20050526	WO 2004-US36784	20041105

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GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
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EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-517751P P 20031105
US 2004-982556 A 20041104

AB The present invention provides methods for diagnosing mental disorders (e.g., psychotic disorders such as schizophrenia). The present invention uses DNA microarray anal. to demonstrate differential expression of genes in selected regions of post-mortem brains from patients diagnosed with mental disorders in comparison with normal control subjects. The invention also provides methods of identifying modulators of such mental disorders as well as methods of using these modulators to **treat** patients suffering from such mental disorders.

L14 ANSWER 4 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:371018 CAPLUS
DOCUMENT NUMBER: 142:411509
TITLE: Preparation of **carotenoid** ester analogs or

derivatives for the **inhibition** and **amelioration** of **liver disease**

INVENTOR(S): Lockwood, Samuel Fournier; O'Malley, Sean; Watumull, David G.; Hix, Laura M.; Jackson, Henry; Nadolski, Geoff

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 139 pp., Cont.-in-part of U.S. Ser. No. 629,538.
CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 13

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2005090469	A1	20050428	US 2004-793660		20040304
US 2004162329	A1	20040819	US 2003-629538		20030729
US 2005037995	A1	20050217	US 2004-793703		20040304
US 2005065097	A1	20050324	US 2004-793696		20040304
US 2005075337	A1	20050407	US 2004-793702		20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P	20020729
			US 2003-467973P	P	20030505
			US 2003-472831P	P	20030522
			US 2003-473741P	P	20030528
			US 2003-485304P	P	20030703
			US 2003-629538	A2	20030729

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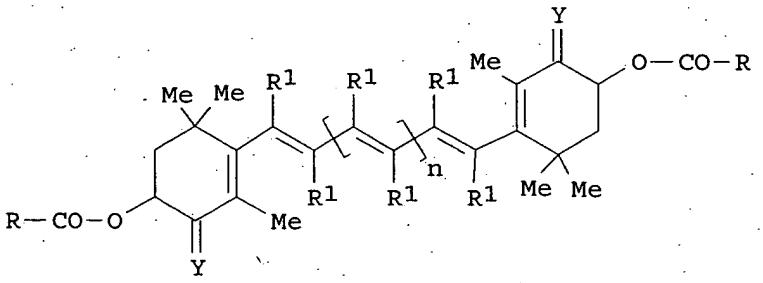

I

AB A method of **treating liver disease** in a subject comprising administering to the subject an effective amount of a pharmaceutically acceptable formulation of a synthetic analog or derivative of a **carotenoid.** **Carotenoid** esters of formula I [R = (substituted) OH, (substituted) alkylamino, amino acid, alkyl, etc.; each R1 = H, Me; n = 5-12] are prepared The subject may be administered a **carotenoid** analog or derivative, either alone or in combination with another **carotenoid** analog or derivative, or co-antioxidant formulation. Thus, astaxanthin disuccinate was prepared from astaxanthin and succinic anhydride. The prepared compds. were tested for **inhibition** of **disease** and pharmacokinetics.

L14 ANSWER 5 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:259647 CAPLUS

DOCUMENT NUMBER: 142:316980

TITLE: Pharmaceutical compositions including

carotenoid ether analogs or derivatives for the **inhibition** and **amelioration** of **disease**

INVENTOR(S): Lockwood, Samuel Fournier; O'Malley, Sean; Watumull, David G.; Hix, Laura M.; Jackson, Henry; Nadolski, Geoff

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 126 pp., Cont.-in-part of U.S. Ser. No. 629,538.
CODEN: USXXCO

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2005065096	A1	20050324	US 2004-793680		20040304
US 2004162329	A1	20040819	US 2003-629538		20030729
US 2005037995	A1	20050217	US 2004-793703		20040304
US 2005065097	A1	20050324	US 2004-793696		20040304
US 2005075337	A1	20050407	US 2004-793702		20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P	20020729
			US 2003-467973P	P	20030505
			US 2003-472831P	P	20030522
			US 2003-473741P	P	20030528
			US 2003-485304P	P	20030703
			US 2003-629538	A2	20030729

OTHER SOURCE(S): MARPAT 142:316980

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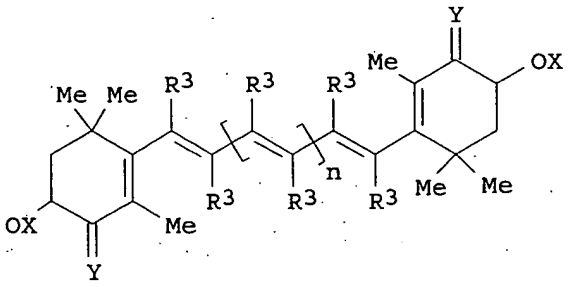

I

AB **Carotenoid** analogs, I, (n = 5-12; R3 = H or Me; Y = O or H2; X = phosphate, sulfate sugar, amine, alkyl, aryl, acid, etc.) for **inhibiting** and/or **ameliorating** the occurrence of **diseases** associated with reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals in a subject whereby a subject is administered a **carotenoid** analog or derivative, either alone or in combination with another **carotenoid** analog or derivative, or co-antioxidant formulation are prepared and evaluated. Thus, astaxanthin in dichloromethane was **treated** with DIPEA, and succinic anhydride to yield the corresponding disuccinic acid ester. The analog or derivative is administered such that the subject's risk of experiencing **diseases** associated with reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals may be thereby reduced. The analog or analog combination may be administered to a subject for the **inhibition** and/or **amelioration** of any **disease** that involves

production of reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals. In some embodiments, the invention may include a pharmaceutical composition including a **carotenoid** analog or derivative In some embodiments, a pharmaceutical composition may include a biol. inactive carrier. The pharmaceutical composition may be adapted to be administered to a human subject.

L14 ANSWER 6 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:237804 CAPLUS
DOCUMENT NUMBER: 142:285155
TITLE: Pharmaceutical compositions and processed foods containing lactoferrin and other active ingredients
INVENTOR(S): Ando, Kunio
PATENT ASSIGNEE(S): NRL Pharma, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005068060	A2	20050317	JP 2003-299214	20030822
PRIORITY APPLN. INFO.:			JP 2003-299214	20030822

AB Antiarthritic agents and processed foods contain lactoferrin (I) and ≥1 other active ingredients chosen from vitamin C, E, D, folic acid, (in)organic Ca salts, glucosamine sulfate, chondroitin sulfate, γ-linolenic acid (II), eicosapentadecanoic acid (sic), docosahexaenoic acid, other ω-3 essential fatty acids, colostrum powder, its protein concentrate, red pepper exts., capsaicin, ginger exts., etc.
Antiallergy agents and processed foods contain I and ≥1 other active ingredients chosen from vitamin C, II, ω-3 essential fatty acids, flavonoids, glycyrrhizin, licorice exts., etc. Antianemic agents and processed foods contain I and ≥1 other active ingredients chosen from vitamin B12, folic acid, Fe gluconate, heme Fe, etc. Also claimed are anti-Alzheimer's, antitumor, hypocholesterolemic, antiarteriosclerotic, antidepressant, antihypertensive, antiobesity agents, etc. I and other active ingredients show synergistic or additive **therapeutic** effects (no data).

L14 ANSWER 7 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:185383 CAPLUS
DOCUMENT NUMBER: 142:261669
TITLE: **Carotenoid** ether analogs or derivatives for controlling c-reactive protein levels
INVENTOR(S): Lockwood, Samuel Fournier; O'Malley, Sean; Watumull, David G.; Hix, Laura M.; Jackson, Henry; Nadolski, Geoff
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 126 pp., Cont.-in-part of U.S. Ser. No. 629,538.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

US 2005049248	A1	20050303	US 2004-793676	20040304
US 2004162329	A1	20040819	US 2003-629538	20030729
US 2005037995	A1	20050217	US 2004-793703	20040304
US 2005065097	A1	20050324	US 2004-793696	20040304
US 2005075337	A1	20050407	US 2004-793702	20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P 20020729
			US 2003-467973P	P 20030505
			US 2003-472831P	P 20030522
			US 2003-473741P	P 20030528
			US 2003-485304P	P 20030703
			US 2003-629538	A2 20030729

OTHER SOURCE(S): MARPAT 142:261669
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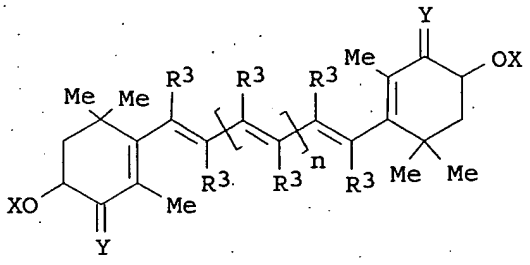

I

AB The preparation and evaluation of **carotenoid** derivs. I (X = phosphate, sulfate, sugar, amine, amino acid, polyethylene glycol, aryl, etc.; R3 = independently H or Me; Y = O, H2; n = 5-12) for controlling C-reactive protein levels is described. Thus, astaxanthin is **treated** with succinic anhydride and DIPEA in CH2Cl2 to give the corresponding disuccinic ester. The subject may be administered a **carotenoid** analog or derivative, either alone or in combination with another **carotenoid** analog or derivative, or co-antioxidant formulation.

L14 ANSWER 8 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:122712 CAPLUS
DOCUMENT NUMBER: 142:213396
TITLE: Fusion proteins with a membrane translocating sequence (MTS) and their use to **inhibit** immune response or a **disease** related to apoptosis
INVENTOR(S): Rojas, Mauricio; Mora, Ana L.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 31 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005032173	A1	20050210	US 2003-634645	20030805
WO 2005017188	A2	20050224	WO 2004-US25240	20040805

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,

GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-634645 A 20030805

AB This invention relates generally to fusion proteins with membrane translocating potential that can enter a cell and regulate gene expression to **prevent** or **treat** an immune response or a **disease** related to apoptosis in a host and methods of using same to **inhibit** such a response. Embodiments of the present invention provide fusion proteins that include a membrane-translocating peptide and methods of using same for **preventing** immune responses including a method for specifically **inhibiting** the NF-κB cascade within a cell in order to **prevent** or **treat** an immune response in a host. In one embodiment of the present invention, the isolated fusion protein includes a membrane-translocating peptide sequence of about 8 to about 50 residues comprising at least eight consecutive residues of SEQ ID NO: 1 (Ala-Ala-Val-Leu-Leu-Pro-Val-Leu-Leu-Ala-Ala-Pro), and an **inhibitory** IκB protein. The IκB protein can be, in alternative embodiments of the invention, an IκBα protein, an IκBβ protein or an IκBε protein. The isolated infusion protein can be used to **treat** or **prevent** an immune response associated with an immune disorder or a **disease** or disorder related to apoptosis, such as cancer, in a host. The IκBα-(ΔN) mol. lacks the sequences required for signal-dependent degradation and it has been show in in vivo systems to be a constitutive repressor of multiple NF-κB/Rel proteins. In the absence of phosphorylation sites, IκBα protein is resistant to degradation but maintains the ability to interact with latent NF-κB/Rel complexes in the cytoplasm inducing permanent retention of NF-κB dimers in the cytoplasm. To determine whether IκBα-(ΔN)-MTS **inhibits** endogenous NF-κB/Rel signaling pathway in vivo, mobility shift analyses in primary thymocytes were performed. The results suggest that the delivered protein is **inhibiting** the translocation of the NF-κB complex from cytoplasm to the nucleus. The delivery of IκBα-(ΔN) permeable proteins into primary T cells altered the normal response of T lymphocytes to antigen stimulation. The results suggest that IκBα-(ΔN)-MTS was able, after a systemic inoculation, to reduce local NF-κB activation induced by the inflammatory process during skin injury.

L14 ANSWER 9 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:99144 CAPLUS
DOCUMENT NUMBER: 142:198233
TITLE: Preparation of **carotenoid** ether analogs or derivatives for the **inhibition** and **amelioration** of **liver disease**
INVENTOR(S): Lockwood, Samuel Fournier; O'Malley, Sean; Watumull, David G.; Hix, Laura M.; Jackson, Henry; Nadolski, Geoff
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 130 pp., Cont.-in-part of U.S. Ser. No. 629,538.

CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2005026874	A1	20050203	US 2004-793681		20040304
US 2004162329	A1	20040819	US 2003-629538		20030729
US 2005037995	A1	20050217	US 2004-793703		20040304
US 2005065097	A1	20050324	US 2004-793696		20040304
US 2005075337	A1	20050407	US 2004-793702		20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P	20020729
			US 2003-467973P	P	20030505
			US 2003-472831P	P	20030522
			US 2003-473741P	P	20030528
			US 2003-485304P	P	20030703
			US 2003-629538	A2	20030729

OTHER SOURCE(S): MARPAT 142:198233
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB A method of **treating liver disease** in a subject. The method may include administering to the subject an effective amount of a pharmaceutically acceptable formulation. The pharmaceutically acceptable formulation may include a synthetic analog or derivative I [Z = {CR3:CR3-(E)}z; z = 5 - 12; R3 = H, Me; Y = O, H2; X = P(:O)(OR1)2, S(:O)(OR1)2, X', alkyl-N+(R2)3, aryl-N+(R2)3, alkyl-CO2-, aryl-CO2-, N-protonated amino acid, phosphorylated N-protonated amino acid, polyethylene glycol, dextran, vitamin C, phosphorylated vitamin C, aryl; R1 = alkyl-N+(R2)3, aryl-N+(R2)3, alkyl-CO2-, aryl-CO2-, N-protonated amino acid, phosphorylated N-protonated amino acid, polyethylene glycol, dextran, H, alkyl, aryl, alkali salt; R2 = H, alkyl, aryl; (wherein X enhances the solubility of I allowing at least partial water solubility)] of a **carotenoid.** The subject may be administered a **carotenoid** analog or derivative, either alone or in combination with another **carotenoid** analog or derivative, or co-antioxidant formulation. The **carotenoid** analog may include a conjugated polyene with between 7 to 14 double bonds. The conjugated polyene may include a cyclic ring including at least one substituent. In some embodiments, a cyclic ring of a **carotenoid** analog or derivative may include at least one substituent. The substituent may be coupled to the cyclic ring with an ether functionality. Thus, astaxanthin disuccinate ascorbate diester was prepared from astaxanthin via acylation with succinic anhydride in CH2Cl2 containing EtNH(CHMe2)2 and catalytic DMAP followed by reaction with 2-O-(tert-butyldimethylsilyl)ascorbic acid in CH2Cl2 containing DMAP and EDCI·HCl. Astaxanthin disuccinate disodium salt was tested for its water solubility, ability to induce Connexin 43 protein expression, induce intercellular gap junction communication, **inhibition** of carcinogen-induced neoplastic transformation, reduce superoxides in neutrophils, and its plasma pharmacokinetics.

L14 ANSWER 10 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:34616 CAPLUS
DOCUMENT NUMBER: 142:114303

TITLE: **Carotenoid** ester analogs or derivatives for controlling connexin 43 expression
INVENTOR(S): Lockwood, Samuel Fournier; O'Malley, Sean; Watumull, David G.; Hix, Laura M.; Jackson, Henry; Nadolski, Geoff
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 135 pp., Cont.-in-part of U.S. Ser. No. 629,538.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2005009930	A1	20050113	US 2004-793686		20040304
US 2004162329	A1	20040819	US 2003-629538		20030729
US 2005037995	A1	20050217	US 2004-793703		20040304
US 2005065097	A1	20050324	US 2004-793696		20040304
US 2005075337	A1	20050407	US 2004-793702		20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P	20020729
			US 2003-467973P	P	20030505
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			US 2003-473741P	P	20030528
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			US 2003-629538	A2	20030729

OTHER SOURCE(S): MARPAT 142:114303
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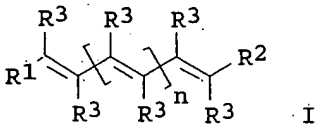

I

AB The preparation and evaluation of **carotenoid** derivs. I (R1, R2 = independently an acyclic alkene comprising at least one substituent, or a cyclic ring comprising at least one substituent; R3 = independently H or Me; n = 5-12) as **inhibitors** of connexin 43 expression for the **treatment** of cardiac arrhythmia and cancers. Thus, astaxanthin in CH2Cl2 was **treated** with DIPEA and succinic andhydride to yield the corresponding disuccinic ester.

L14 ANSWER 11 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:34594 CAPLUS
DOCUMENT NUMBER: 142:114302
TITLE: **Carotenoid** ester analogs or derivatives for controlling connexin 43 expression
INVENTOR(S): Lockwood, Samuel Fournier; O'Malley, Sean; Watumull, David G.; Hix, Laura M.; Jackson, Henry; Nadolski, Geoff
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 133 pp., Cont.-in-part of U.S. Ser. No. 629,538.
CODEN: USXXCO
DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2005009788	A1	20050113	US 2004-793697		20040304
US 2004162329	A1	20040819	US 2003-629538		20030729
US 2005037995	A1	20050217	US 2004-793703		20040304
US 2005065097	A1	20050324	US 2004-793696		20040304
US 2005075337	A1	20050407	US 2004-793702		20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P	20020729
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			US 2003-473741P	P	20030528
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			US 2003-629538	A2	20030729

OTHER SOURCE(S): MARPAT 142:114302
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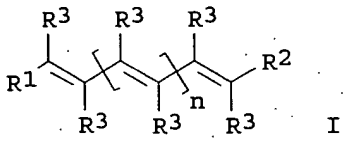

I

AB The preparation and evaluation of **carotenoid** derivs. I (R1, R2 = independently an acyclic alkene comprising at least one substituent, or a cyclic ring comprising at least one substituent; R3 = independently H or Me; n = 5-12) as **inhibitors** of connexin 43 expression for the **treatment** of cardiac arrhythmia and cancers. Thus, astaxanthin in CH2Cl2 was **treated** with DIPEA and succinic andhydride to yield the corresponding disuccinic ester.

L14 ANSWER 12 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:34587 CAPLUS
DOCUMENT NUMBER: 142:114301
TITLE: **Carotenoid** ether analogs or derivatives for the **inhibition** and **amelioration** of **diseases** associated with reactive radical species
INVENTOR(S): Lockwood, Samuel Fournier; O'Malley, Sean; Watumull, David G.; Hix, Laura M.; Jackson, Henry; Nadolski, Geoff
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 125 pp., Cont.-in-part of U.S. Ser. No. 629,538.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005009758	A1	20050113	US 2004-793671	20040304
US 2004162329	A1	20040819	US 2003-629538	20030729

US 2005037995	A1	20050217	US 2004-793703		20040304
US 2005065097	A1	20050324	US 2004-793696		20040304
US 2005075337	A1	20050407	US 2004-793702		20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P	20020729
			US 2003-467973P	P	20030505
			US 2003-472831P	P	20030522
			US 2003-473741P	P	20030528
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			US 2003-629538	A2	20030729

OTHER SOURCE(S): MARPAT 142:114301

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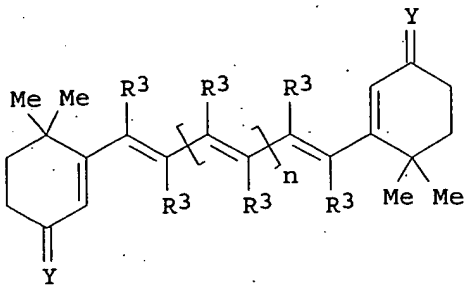

I

AB A method for **inhibiting** and/or **ameliorating** the occurrence of **diseases** associated with reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals in a subject whereby a subject is administered a **carotenoid** analog or derivative of structure I (n = 5-12; R3 = H or Me; Y = O or H2, X = phosphate, sulfate, sugar, amine alkyl, acid, etc.) either alone or in combination with another **carotenoid** analog or derivative, or co-antioxidant formulation. Thus, astaxanthin is **treated** with succinic anhydride and DIPEA to yield the corresponding disuccinic acid ester. The analog or derivative is administered such that the subject's risk of experiencing **diseases** associated with reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals may be thereby reduced. The analog or analog combination may be administered to a subject for the **inhibition** and/or **amelioration** of any **disease** that involves production of reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals.

L14 ANSWER 13 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER:	2005:17025 CAPLUS
DOCUMENT NUMBER:	142:94006
TITLE:	**Carotenoid** analogs or derivatives for the **inhibition** and **amelioration** of **liver disease**
INVENTOR(S):	Lockwood, Samuel Fournier; O'Malley, Sean; Watumull, David G.; Hix, Laura M.; Jackson, Henry; Nadolski, Geoff
PATENT ASSIGNEE(S):	USA
SOURCE:	U.S. Pat. Appl. Publ., 140 pp., Cont.-in-part of U.S. Ser. No. 629,538. CODEN: USXXCO
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	13
PATENT INFORMATION:	

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2005004235	A1	20050106	US 2004-793675		20040304
US 2004162329	A1	20040819	US 2003-629538		20030729
US 2005037995	A1	20050217	US 2004-793703		20040304
US 2005065097	A1	20050324	US 2004-793696		20040304
US 2005075337	A1	20050407	US 2004-793702		20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P	20020729
			US 2003-467973P	P	20030505
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			US 2003-473741P	P	20030528
			US 2003-485304P	P	20030703
			US 2003-629538	A2	20030729

OTHER SOURCE(S): MARPAT 142:94006

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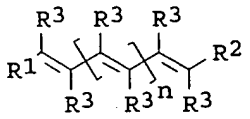

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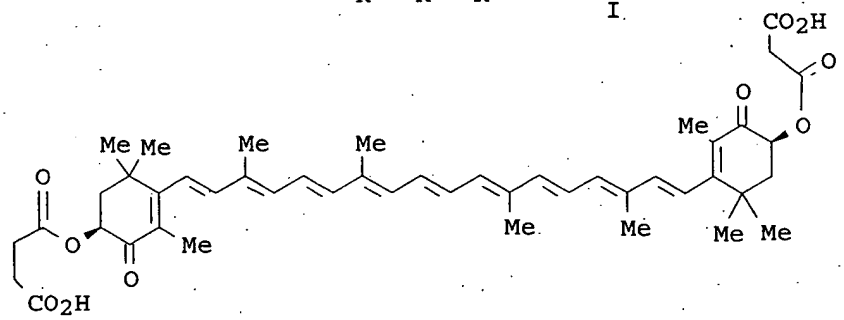

II

AB The preparation and evaluation of **carotenoid** derivs. I (R1, R2 = independently an acyclic alkene comprising at least one substituent, or a cyclic ring comprising at least one substituent; R3 = independently H or Me; n = 5-12) as antioxidants for the **treatment** of **liver disease** is described. Thus, astaxanthin in CH2Cl2 was **treated** with DIPEA and succinic andhydride to yield II.

L14 ANSWER 14 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:1126836 CAPLUS
DOCUMENT NUMBER: 142:49225
TITLE: Quercetin supplementation to **treat** hypertension
INVENTOR(S): Jalili, Thunder
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 16 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004258674	A1	20041223	US 2004-822568	20040412

PRIORITY APPLN. INFO.: US 2003-461861P P 20030410

AB The invention discloses a method and a nutritional supplement comprised of quercetin for improving cardiovascular health by **preventing**, slowing the progression of, and/or **treating** hypertension.

L14 ANSWER 15 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:902155 CAPLUS
DOCUMENT NUMBER: 141:384286
TITLE: Novel encochleation methods, cochleates and methods of use
INVENTOR(S): Mannino, Raphael J.; Gould-Fogerite, Susan; Krause-Elsmore, Sara L.; Delmarre, David; Lu, Ruying
PATENT ASSIGNEE(S): Biodelivery Sciences International, Inc., USA; University of Medicine and Dentistry of New Jersey
SOURCE: PCT Int. Appl., 195 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004091578	A2	20041028	WO 2004-US11026	20040409
WO 2004091578	C1	20050127		
WO 2004091578	A3	20050331		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2005013854	A1	20050120	US 2004-822230	20040409

PRIORITY APPLN. INFO.:
US 2003-461483P P 20030409
US 2003-463076P P 20030415
US 2003-499247P P 20030828
US 2003-502557P P 20030911
US 2003-532755P P 20031224
US 2004-537252P P 20040115
US 2004-556192P P 20040324

AB The invention generally relates to cochleate drug delivery vehicles. Disclose are novel methods for making cochleates and cochleate compns. that include introducing a cargo moiety to a liposome in the presence of a solvent. Also disclosed are cochleates and cochleate compns. that include an aggregation **inhibitor**, and optionally, a cargo moiety. Addnl., anhydrous cochleates that include a protonized cargo moiety, a divalent metal cation and a neg. charge lipid are disclosed. Methods of using the cochleate compns. of the invention, including methods of administration, are also disclosed.

L14 ANSWER 16 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:550751 CAPLUS
DOCUMENT NUMBER: 141:82338
TITLE: Lipid metabolism and fructus crataegus, bioflavonoids from hawthorn berry for **inhibiting** 3-HMG-CoA

reductase and cholesterol synthesis
INVENTOR(S): Liao, Benedict Schue; Liao, Judy Fu-Chuan; Liao, Alex; Liao, Austin; Liao, Burton Arthur; Liao-Tung, Su-Hsin; Liao-Nieng, Susan; Nieng, Cathy; Liao-Chen, Su-Lien; Liao, Schue-Yuan
PATENT ASSIGNEE(S): Liao Medical Corporation, USA
SOURCE: U.S. Pat. Appl. Publ., 17 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004132816	A1	20040708	US 2003-337434	20030106
PRIORITY APPLN. INFO.:			US 2003-337434	20030106

AB A method for **treating** and/or **preventing** the cardiovascular and **hepatic diseases** induced by hyperlipidemia which comprises administered thereto an effective amount of bioflavonoids extract derived from hawthorn berry (fructus crataegus) such as rutin, quercetin, kaempferol and vitexin or a mixture thereof. Administration of rutin, quercetin, kaempferol, and vitexin to rabbits decreased plasma total cholesterol and triglycerides by 32-33%, 45-47%, 30-30% and 22-17%, resp., as compared to that of a control group. Rutin, quercetin, kaempferol and vitexin were more effective in reducing plasma total cholesterol and triglycerides than Simvastatin. Furthermore, **liver** function and WBC were not affected as that of the Simvastatin group. The bioflavonoids are added to food products, beverages, and multivitamin tablets.

L14 ANSWER 17 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:451474 CAPLUS
DOCUMENT NUMBER: 141:1258
TITLE: Nitrosated compounds in methods of **treating** vascular **diseases** characterized by nitric oxide insufficiency
INVENTOR(S): Loscalzo, Joseph; Vita, Joseph A.; Loberg, Michael D.; Worcel, Manuel
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 23 pp., Cont.-in-part of U.S. Ser. No. 679,257.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2004105850	A1	20040603	US 2003-692724		20031027
US 6635273	B1	20031021	US 2000-697317		20001027
US 2004071766	A1	20040415	US 2003-679257		20031007
PRIORITY APPLN. INFO.:			US 1999-162230P	P	19991029
			US 2000-179020P	P	20000131
			US 2000-697317	A1	20001027
			US 2003-679257	A2	20031007

OTHER SOURCE(S): MARPAT 141:1258
AB The invention provides methods of **treating** and/or **preventing** vascular **diseases** characterized by nitric

oxide insufficiency by administering a **therapeutically** effective amount of at least one nitrosated angiotensin-converting enzyme **inhibitor**, nitrosated beta-adrenergic blocker, nitrosated cholesterol reducer, nitrosated calcium channel blocker, nitrosated endothelin antagonist, nitrosated angiotensin II receptor antagonist, nitrosated renin **inhibitor**, and optionally at least one compound used to **treat** cardiovascular **diseases** and/or at least one antioxidant, or a pharmaceutically acceptable salt thereof, and/or at least one compound that donates, transfers or releases nitric oxide, elevates endogenous levels of endothelium-derived relaxing factor, stimulates endogenous synthesis of nitric oxide or is a substrate for nitric oxide synthase. The antioxidant may preferably be a hydralazine compound or a pharmaceutically acceptable salt thereof. The compound that donates, transfers or releases nitric oxide, elevates endogenous levels of endothelium-derived relaxing factor, stimulates endogenous synthesis of nitric oxide or is a substrate for nitric oxide synthase may preferably be isosorbide dinitrate and/or isosorbide mononitrate. The vascular **diseases** characterized by nitric oxide insufficiency include a cardiovascular **disease** and a **disease** resulting from oxidative stress. Nitric oxide action was shown to be impaired in the microvasculature of black hypertensive patients to a greater extent than in white hypertensive patients.

L14 ANSWER 18 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:352951 CAPLUS
DOCUMENT NUMBER: 140:350582
TITLE: Methods and combination compositions using antioxidants, nitrosated compounds, and other agents for the **treatment** of vascular **diseases** characterized by nitric oxide insufficiency
INVENTOR(S): Loscalzo, Joseph; Vita, Joseph A.; Loberg, Michael D.; Worcel, Manuel
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 28 pp., Cont.-in-part of U.S. 6,635,273.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2004081642	A1	20040429	US 2003-687706		20031020
US 6635273	B1	20031021	US 2000-697317		20001027
PRIORITY APPLN. INFO.:			US 1999-162230P	P	19991029
			US 2000-179020P	P	20000131
			US 2000-697317	A2	20001027

OTHER SOURCE(S): MARPAT 140:350582
AB The invention provides methods of **treating** or **preventing** vascular **diseases** caused by nitric oxide (NO) insufficiency. The methods encompass administering a composition comprising an antioxidant, a compound to **treat** cardiovascular **diseases**, a nitrosated compound, a compound that donates, transfers or releases NO, or is a NO synthase substrate, or endogenously stimulates NO synthesis, or stimulates levels of endothelium derived relaxing factor. In the composition, a hydralazine compound may be an antioxidant, isosorbide mono-or dinitrate may be the compound to donate, transfer, release, or stimulate endogenous NO synthesis. The isosorbide may also elevate endogenous levels of

endothelium-derived relaxing factor, or be a NO synthase substrate and angiotensin enzyme **inhibitor** may be nitrosated compound Disclosed in the invention is also a method to **treat**, or **prevent** Renaud's syndrome by administering a **therapeutically** effective amount of an antioxidant, a NO donor, a nitrosated compound and novel sustained-release formulations (e.g. a transdermal patch).

L14 ANSWER 19 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:290783 CAPLUS
DOCUMENT NUMBER: 141:360626
TITLE: β- **Carotene Prevents** Bile Acid-Induced Cytotoxicity in the Rat Hepatocyte: Evidence for an Antioxidant and Anti-Apoptotic Role of β- **Carotene** In Vitro
AUTHOR(S): Gumpricht, Eric; Dahl, Rolf; Devereaux, Michael W.; Sokol, Ronald J.
CORPORATE SOURCE: Department of Pediatrics, Section of Pediatric Gastroenterology, Hepatology and Nutrition, University of Colorado School of Medicine and The Children's Hospital, Denver, CO, 80262, USA
SOURCE: Pediatric Research (2004), 55(5), 814-821
CODEN: PEREBL; ISSN: 0031-3998
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Hydrophobic bile acids are implicated in the pathogenesis of cholestatic **liver** disorders through mechanisms involving oxidative stress and mitochondrial **dysfunction.** Antioxidants **ameliorate** bile acid-induced cytotoxicity in rat hepatocyte suspensions. The purpose of the current study was to evaluate the potential protective role of β- **carotene** (βC), a putative fat-soluble antioxidant that is reduced in patients with cholestasis, against bile acid-induced hepatotoxicity. In freshly isolated rat hepatocyte suspensions that were exposed to the toxic hydrophobic bile acid glycochenodeoxycholic acid (GCDC) (100 or 500 μM), βC (100 μM) decreased generation of reactive oxygen species by >50%, similar to the **inhibition** afforded by α-tocopherol (α-TH). Commensurate with this antioxidant effect, 100 μM βC also protected hepatocytes against both glycochenodeoxycholic acid-induced cellular necrosis and apoptosis, which was associated with reduction in caspase 3 activation, **inhibition** of mitochondrial cytochrome c release in rat hepatocytes, and **prevention** of the mitochondrial permeability transition (MPT) in both **liver** mitochondria and rat hepatocytes. A lower concentration of βC (50 μM) produced similar antioxidant and anti-apoptotic protection but with less **inhibition** against cell necrosis, suggesting that the higher concentration of βC may have conferred addnl. cytoprotection not directly related to its antioxidant function. These results demonstrate that the antioxidant effects of βC may provide hepatoprotection against cholestatic **liver** injury by **preventing** bile acid-induced oxidative stress and mitochondrial perturbations.
REFERENCE COUNT: 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 20 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:280340 CAPLUS
DOCUMENT NUMBER: 141:379295
TITLE: Antioxidant effect of **carotenoid** on alteration of cytochrome c oxidase and superoxide dismutase activities in the brain and spinal cord of

the motor neuron degeneration mouse during postnatal development
AUTHOR(S): Yoshimoto, N.; Fujita, K.; Kato, T.; Shibayama, K.; Murakami, Y.; Nagata, Y.; Miyachi, E.
CORPORATE SOURCE: Department of Physiology, School of Medicine, Fujita Health University, Japan
SOURCE: Fujita Gakuen Igakkaishi (2002), 26(2), 29-35
CODEN: FGIGDO; ISSN: 0288-5441
PUBLISHER: Fujita Gakuen Igakkai
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB Motor neuron degeneration (Mnd) mice or control mice (1,3,5,7,9 mo of age) were fed a diet containing lycopene, and measured the superoxide dismutase and cytochrome C oxidase activities in brain cortex and spinal cord. The results showed the **inhibitory** effect of lycopene intake on neuron degeneration through oxygen free radical scavenging activity.

L14 ANSWER 21 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:205455 CAPLUS
DOCUMENT NUMBER: 140:245912
TITLE: Antioxidative strategies in patients with severe **liver disease**
AUTHOR(S): Reiter, A.; Steltzer, H.
CORPORATE SOURCE: Universitaetsklinik fuer Anesthesia und Allgemeine Intensivmedizin, Universitaet Wien, OEsterreich, Austria
SOURCE: Aktuelle Ernaehrungsmedizin (2004), 29(1), 19-24
CODEN: AEKPDQ; ISSN: 0341-0501
PUBLISHER: Georg Thieme Verlag
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Many **diseases** are linked to oxidative damage from reactive oxygen species as a result of an imbalance between radical generating and radical scavenging systems, a condition known as oxidative stress. In patients with **hepatitis** or other chronic **liver diseases**, there is consistent evidence of enhanced oxidative stress. Exptl. studies have also elucidated the relationship between the hyperprodn. of reactive oxygen species during the reperfusion phase and ischemia-reperfusion tissue injury. Nearly all cell types in the **liver** have the capacity to generate oxygen-free radicals, which participate as initiating factors and modulators in the induction and progression of **liver disease.** Glutathione, a tripeptide synthesized in the **liver**, plays a crucial role against oxidative stress. A deficiency of **hepatic** glutathione and its antioxidant partners are found to be reduced in **liver diseases**, which amplifies further progression of **liver** cell damage. **Inhibition** of reactive oxygen species production and augmentation of antioxidant defenses is a logical approach in the **treatment** of **liver** cell damage. Vitamins C, E, A and β **carotene** are found to be effective as scavengers of reactive oxygen species. Some new approaches based on gene delivery of antioxidant enzymes have been developed. The measurement of oxidative damage can be quantified by the specific biomarkers of altered redox state. However, exptl. data on this subject have not always been confirmed clin. Very few data are available on the causal relationship between the degree of oxidative damage or oxidative stress parameters and the outcome of patients. Future research is required to standardize the antioxidative **treatment** and to better observe the progression of **liver diseases** during this **treatment.**
REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 22 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:162560 CAPLUS
DOCUMENT NUMBER: 140:193107
TITLE: Methods and compositions for **treatment** of macular and retinal **disease** with **carotenoid**-linked drugs
INVENTOR(S): Marcus, Dennis Michael; Chu, Chung Kwang
PATENT ASSIGNEE(S): Medical College of Georgia Research Institute, Inc., USA
SOURCE: PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004016214	A2	20040226	WO 2003-US25229	20030813
WO 2004016214	A3	20040930		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2493748	AA	20040226	CA 2003-2493748	20030813
US 2004087664	A1	20040506	US 2003-639972	20030813
EP 1542664	A2	20050622	EP 2003-788401	20030813
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				

PRIORITY APPLN. INFO.: US 2002-403499P P 20020814
WO 2003-US25229 W 20030813

AB The present invention describes linking a **therapeutic** agent to a compound which is known to be naturally concentrated in a tissue affected by, or that is causing, a **disease**, to create a prodrug for **treatment** of the **disease**. Embodiments of the present invention include a new class of **carotenoid**-linked drugs to **treat** such blinding retinal **disease** such as age-related macular degeneration, retinoblastoma, and diabetic macular edema. For example, the present invention comprises a method for the **treatment** of a disorder of the eye comprising linking a **therapeutic** agent to a xanthophyll **carotenoid** to create a prodrug, and administering a **therapeutically** effective amount of the prodrug to an individual in need of **treatment**. Provided are prodrugs for **treatment** of retinoblastoma, cystoid macular edema (CME), exudative age-related macular degeneration (AMD), diabetic retinopathy, diabetic macular edema, or inflammatory disorders.

L14 ANSWER 23 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:162222 CAPLUS
DOCUMENT NUMBER: 140:193060
TITLE: Methods for **treating** pancreatitis with

curcumin compounds and **inhibitors** of reactive oxygen species
INVENTOR(S): Pandol, Stephen J.; Gukovsky, Ilya Y.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 29 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004037902	A1	20040226	US 2002-218518	20020815
PRIORITY APPLN. INFO.:			US 2002-218518	20020815

AB Disclosed are methods of **treating**, **preventing**, modulating, attenuating, or **inhibiting** a **disease** or a disorder associated with inflammation related to NF-κB activation in a subject which comprises administering to the subject at least one curcumin compound Also disclosed are combination **therapies** comprising the administration of at least one curcumin compound and at least one ROS **inhibitor**. Pharmaceutical compns. and kits are also disclosed. The combination of curcumin and N-acetylcysteine (ROS **inhibitor**) provided a synergistic effect against NF-κB activation in rat pancreatic acinar cells.

L14 ANSWER 24 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:777613 CAPLUS
DOCUMENT NUMBER: 139:281205
TITLE: A process for the extraction of anthocyanins from black rice for **treatment** of cardiovascular **diseases**
INVENTOR(S): Zawistowski, Jerzy; Hu, Chun; Kitts, David D.
PATENT ASSIGNEE(S): Forbes Medi-Tech Inc., Can.
SOURCE: PCT Int. Appl., 72 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003080084	A1	20031002	WO 2003-CA433	20030326
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2480471	AA	20031002	CA 2003-2480471	20030326
EP 1490080	A1	20041229	EP 2003-709488	20030326
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
BR 2003008698	A	20050201	BR 2003-8698	20030326
PRIORITY APPLN. INFO.:			US 2002-108305 A	20020326
			WO 2003-CA433 W	20030326

AB A process of extracting a composition comprising anthocyanins from black rice (Oryza sativa) comprises separating an outer layer from a starchy endosperm in de-hulled black rice; adding a solution of at least one organic solvent and an acid to the separated outer layer; filtering and removing the solvent and the acid from the separated outer layer to produce a pigment fraction; separating constituents of the pigment fraction; and collecting the anthocyanin composition therefrom. The composition comprises cyanidin-3-O-glucoside and peonidin-3-O-glucoside, and addnl. comprises antioxidants, sterols, and stanols. This composition is useful in enhancing and/or preserving the stability of HDL-C and the atherogenic lipoproteins such as LDL-C, VLDL-C, and IDL-C from oxidation, in **preventing**, reducing, eliminating or **ameliorating** injuries due to oxidative stress, and in **preventing**, reducing, eliminating or **ameliorating** the development of atherosclerotic lesions and inflammation associated therewith.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 25 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:753611 CAPLUS
DOCUMENT NUMBER: 140:138460
TITLE: Anti-carcinogenic activities of natural pigments from beet root and saffron
AUTHOR(S): Konoshima, Takao; Takasaki, Midori
CORPORATE SOURCE: Laboratory of Pharmaceutical Sciences of Natural Resources, Kyoto Pharmaceutical University, Misasagi, Yamashina-ku, Kyoto, 607-8414, Japan
SOURCE: Foods & Food Ingredients Journal of Japan (2003), 208(8), 615-622
CODEN: FFIJER; ISSN: 0919-9772
PUBLISHER: FFI Janaru
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese

AB A review. Many natural pigments such as curcumin, **carotenoids** and anthocyanins had been examined for antioxidant activity and as agents for the **prevention** of lifestyle-related **disease**, and many kinds of fruitful results had been reported worldwide. To search for cancer chemopreventive agents from natural resources, in our research group, many phytochems. and food additives have been screened. In this paper, we report the anticarcinogenic effects of betanin from the beet root (Beta vulgaris var. rubra) and crocin from the Saffron (Crocus sativus) or Gardenia jasminoides. These two natural pigments exhibited strong anti-tumor-promoting effects on the two-stage carcinogenesis induced by 7,12-dimethylbenz[a]anthracene (DMBA) and 12-O-tetradecanoylphorbol-13-acetate (TPA). Further, betanin exhibited remarkable **inhibitory** effects on the two-stage carcinogenesis of mouse pulmonary tumors (induced by 4-nitroquinoline-N-oxide as an initiator and glycerol as a promoter) and **hepatic** tumors (induced by N-nitrosodiethylamine as an initiator and phenobarbital as a promoter). And, betanin also exhibited significant **inhibitory** effects on the two-stage carcinogenesis initiated by both NO donor and peroxynitrite. Beet root is useful not only as a pigment resource but is also one of the vegetables for salad, pickles and stew. Further C. sativus and G. jasminoides are also used for not only pigment but also for herbal medicines. Therefore, these results strongly suggested that both betanin and crocin might be valuable as chemopreventive agents against chemical carcinogenesis, and beet root and C. sativus are also valuable as a source of chemopreventive agents and for the **prevention** of lifestyle-related **disease**.

L14 ANSWER 26 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:656555 CAPLUS
DOCUMENT NUMBER: 139:202483
TITLE: Compositions comprising lycopene for the **treatment** and **prevention** of angiogenesis associated pathologies
INVENTOR(S): Barella, Luca; Goralczyk, Regina; Jung, Klaus; Lein, Michael; Siler, Ulrich; Stoecklin, Elisabeth; Wertz, Karin
PATENT ASSIGNEE(S): Roche Vitamins A.-G., Switz.; Humboldt Universitaet
SOURCE: PCT Int. Appl., 27 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003068202	A1	20030821	WO 2003-EP1149	20030206
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1476143	A1	20041117	EP 2003-702602	20030206
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				

PRIORITY APPLN. INFO.: EP 2002-3544 A 20020215
WO 2003-EP1149 W 20030206

AB The invention is concerned with the use of lycopene, optionally in combination with vitamin E and/or C or other biol. active ingredients as disclosed in the specification, in the manufacture of a composition for the primary and secondary **prevention** of angiogenesis-associated pathologies and coadjuvant **treatment** thereof, as well as with particular novel formulations comprising lycopene. A tablet for the coadjuvant **treatment** of prostate carcinoma is formulated to contain 5 mg of lycopene, 200 mg of vitamin E, 250 mg of vitamin C, 37.5 mg of resveratrol, and 50 mg of quercetin. The daily dosage is two such tablets.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 27 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:561742 CAPLUS
DOCUMENT NUMBER: 139:305103
TITLE: Regulation of heme oxygenase-1 gene expression by anoxia and reoxygenation in primary rat hepatocyte cultures
AUTHOR(S): Ohlmann, Andreas; Giffhorn-Katz, Susanne; Becker, Ivonne; Katz, Norbert; Immenschuh, Stephan
CORPORATE SOURCE: Institut fuer Klinische Chemie und Pathobiochemie der Justus-Liebig-Universitaet Giessen, Giessen, 35392, Germany

SOURCE: Experimental Biology and Medicine (Maywood, NJ, United States) (2003), 228(5), 584-589
CODEN: EBMMBE; ISSN: 1535-3702
PUBLISHER: Society for Experimental Biology and Medicine
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Heme oxygenase (HO) catalyzes the rate-limiting enzymic step of heme degradation and regulates the cellular heme content. Gene expression of the inducible isoform of HO, HO-1, is upregulated in response to various oxidative stress stimuli. To investigate the regulatory role of anoxia and reoxygenation (A/R) on **hepatic** HO-1 gene expression, primary cultures of rat hepatocytes were exposed after an anoxia of 4 h to normal oxygen tension for various lengths of time. For comparison, gene expression of the noninducible HO isoform, HO-2, and that of the heat-shock protein 70 (HSP70) were determined During reoxygenation, a marked increase of HO-1 and HSP70 steady-state mRNA levels was observed, whereas no alteration of HO-2 mRNA levels occurred. Corresponding to HO-1 mRNA, an increase of HO-1 protein expression was determined by Western blot anal. The anoxia-dependent induction of HO-1 was **prevented** by pretreatment with the transcription **inhibitor**, actinomycin D, but not by the protein synthesis **inhibitor**, cycloheximide, suggesting a transcriptional regulatory mechanism. After exposure of hepatocytes to anoxia, the relative levels of oxidized glutathione increased within the first 40 min of reoxygenation. Pretreatment of cell cultures with the antioxidant agents, β- **carotene** and allopurinol, before exposure to A/R led to a marked decrease of HO-1 and HSP70 mRNA expression during reoxygenation. An even more pronounced reduction of mRNA expression was observed after exposure to desferrioxamine. Taken together, the data demonstrate that HO-1 gene expression in rat hepatocyte cultures after A/R is upregulated by a transcriptional mechanism that may be, in part, mediated via the generation of ROS and the glutathione system.

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 28 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:133068 CAPLUS
DOCUMENT NUMBER: 138:158869
TITLE: Medicinal compositions having effects of **ameliorating** eye **diseases** and holding eye functions
INVENTOR(S): Yamagami, Chiduko; Yamagami, Sueto; Itakura, Hiroshige
PATENT ASSIGNEE(S): Japan
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003013556	A1	20030220	WO 2001-JP6672	20010802
W: AU, CN, JP, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				

PRIORITY APPLN. INFO.: WO 2001-JP6672 20010802

AB It is said that active oxygen largely affects eye **diseases.** In particular, age-related macular degeneration is considered as a serious **disease** for which no **therapeutic** method has been established so far. A large amount of active oxygen is generated due to the

concentration of light at the macula in the retina. It is estimated that damages due to the active oxygen are accumulated in the macula with aging, thereby resulting in the onset of macular degeneration. Medicinal compns. efficacious against these eye **diseases** are obtained by the combination of the recent results in Western medicine with traditional Chinese knowledge. These compns. contain as the fundamental main components animal **livers**, which have been employed as remedies for eye **diseases** for a long time, and vitamins and **carotenoids** having a strong effect of eliminating active oxygen from the human body. As the animal **livers**, use can be made of carp **liver**, mamushi pit viper **liver** and sheep **liver**. Examples of the antioxidants include vitamin C, vitamin E, astaxanthin and lycopene. It is favorable to add powdery blueberry concentrate having an effect of activating the re-synthesis of rhodopsin.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 29 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:571755 CAPLUS
DOCUMENT NUMBER: 137:276807
TITLE: β- **Carotene** cleavage products induce oxidative stress in vitro by impairing mitochondrial respiration
AUTHOR(S): Siems, Werner; Sommerburg, Olaf; Schild, Lorenz; Augustin, Wolfgang; Langhans, Claus-Dieter; Wiswedel, Ingrid
CORPORATE SOURCE: Herzog-Julius Hospital for Rheumatology and Orthopedics, Bad Harzburg, Germany
SOURCE: FASEB Journal (2002), 16(10), 1289-1291, 10.1096/fj.01-0765fje
CODEN: FAJOEC; ISSN: 0892-6638
PUBLISHER: Federation of American Societies for Experimental Biology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB **Carotenoids** are widely used as important micronutrients in food. Furthermore, **carotenoid** supplementation has been used in the **treatment** of **diseases** associated with oxidative stress. However, in some clin. studies harmful effects have been observed, for example, a higher incidence of lung cancer in individuals exposed to extraordinary oxidative stress. The causal mechanisms are still unclear. **Carotenoid** cleavage products (CCPs), including highly reactive aldehydes and epoxides, are formed during oxidative attacks in the course of antioxidative action. Here, we tested the hypothesis that CCPs may increase oxidative stress by impairing mitochondrial function. We found that CCPs strongly **inhibit** state 3 respiration of isolated rat **liver** mitochondria even at concns. between 0.5 and 20 μM. This was true for retinal, β-ionone, and mixts. of cleavage products, which were generated in the presence of hypochlorite to mimic their formation in inflammatory regions. The **inhibition** of mitochondrial respiration was accompanied by a reduction in protein sulfhydryl content, decreasing glutathione levels and redox state, and elevated accumulation of malondialdehyde. Changes in mitochondrial membrane potential favor functional deterioration of the adenine nucleotide translocator. The findings may reflect a basic mechanism of increasing the risk of cancer induced by CCPs.

REFERENCE COUNT: 58 THERE ARE 58 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 30 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:471664 CAPLUS
DOCUMENT NUMBER: 138:19426
TITLE: Zeaxanthin dipalmitate from Lycium chinense fruit reduces experimentally induced **hepatic** fibrosis in rats
AUTHOR(S): Kim, Hong Pyo; Lee, Eun Ju; Kim, Young Chul; Kim, Jinwoong; Kim, Hye Kyung; Park, Jae-Hak; Kim, Sun Yeou; Kim, Young Choong
CORPORATE SOURCE: College of Pharmacy, Seoul National University, Seoul, 151-742, S. Korea
SOURCE: Biological & Pharmaceutical Bulletin (2002), 25(3), 390-392
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We previously reported that zeaxanthin dipalmitate (ZD), a **carotenoid** from Lycium chinense fruit, reduces myofibroblast-like cell proliferation and collagen synthesis in vitro. To determine whether ZD might reduce the severity of **hepatic** fibrosis in an animal model, **hepatic** fibrosis was induced in rats by bile duct ligation/scission (BDL) for a period of 6 wk. **Treatment** of BDL rats with ZD at a dose of 25 mg/kg body weight significantly reduced the activities of aspartate transaminase ($p<0.05$) and alkaline phosphatase ($p<0.001$) in serum. Furthermore, collagen deposition was significantly reduced as assessed by the Sirius Red binding assay in BDL rats administered ZD at the dose of 25 mg/kg body weight ($p<0.01$). In addition, the levels of thiobarbituric acid-reactive substances and 4-hydroxyproline were reduced when BDL rats received ZD at the dose of 25 mg/kg body weight These results showed that ZD effectively **inhibited** **hepatic** fibrosis in BDL rats, at least in part via its antioxidative activity.
REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 31 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:334591 CAPLUS
DOCUMENT NUMBER: 137:346027
TITLE: **Inhibition** of **liver** fibrosis in LEC rats by a **carotenoid**, lycopene, or a herbal medicine, Sho-saiko-to
AUTHOR(S): Kitade, Yukihiro; Watanabe, Seishiro; Masaki, Tsutomu; Nishioka, Mikio; Nishino, Hoyoku
CORPORATE SOURCE: Third Department of Internal Medicine, Kagawa Medical University, Kagawa, 761-0793, Japan
SOURCE: Hepatology Research (2002), 22(3), 196-205
CODEN: HPRSFM; ISSN: 1386-6346
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We assessed the **prevention** of **hepatic** fibrogenesis by a herbal medicine Sho-saiko-to or a **carotenoid** lycopene in Long-Evans rats with cinnamon coat color (LEC rats). LEC rats were divided into three groups: A (n = 40), fed on a basal diet (BD); B (n = 25), fed on BD plus 1% Sho-saiko-to; and C (n = 40), fed on BD plus 0.005% lycopene. All rats were sacrificed at 76 wk of age. The **liver** tissues were stained with Azan-Mallory and α-smooth muscle actin (α-SMA). The malondialdehyde (MDA) in the **liver** was measured for the assay of lipoperoxides. The percentage of the total area

stained was determined morphometrically. The percentage of the total area involved by fibrosis was 1.35 ± 0.56 in group A, 0.72 ± 0.34 in B (P = 0.0020, B vs. A) and 0.78 ± 0.75 in C (P = 0.0031, C vs. A). The percentage of the total area that was stained for α-SMA was 0.61 ± 0.57 in group A, 0.11 ± 0.05 in B (P = 0.0017, B vs. A) and 0.12 ± 0.06 in C (P = 0.0021, C vs. A). In group B, MDA in the **liver** was lower than in group C (P = 0.009). In group C, the concentration of iron in the **liver** was lower than in group A (P = 0.0059). In conclusion, Sho-saiko-to suppressed fibrogenesis through reduced generation of lipid peroxides. **Hepatic** fibrogenesis was also suppressed by lycopene. The mechanisms of this **preventive** effect of fibrogenesis with Sho-saiko-to and lycopene were suggested to **inhibit** the stellate cell activity.

REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 32 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:332068 CAPLUS
DOCUMENT NUMBER: 136:335235
TITLE: Methods of **treating** vascular **diseases** characterized by nitric oxide insufficiency
INVENTOR(S): Loscalzo, Joseph; Vita, Joseph A.; Loberg, Michael D.; Worcel, Manuel
PATENT ASSIGNEE(S): Nitromed, Inc., USA; Trustees of Boston University
SOURCE: PCT Int. Appl., 64 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002034303	A1	20020502	WO 2001-US14245	20010502
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
WO 2001035961	A1	20010525	WO 2000-US29528	20001027
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6635273	B1	20031021	US 2000-697317	20001027
CA 2421885	AA	20020502	CA 2001-2421885	20010502
AU 2001059399	A5	20020506	AU 2001-59399	20010502
EP 1337283	A1	20030827	EP 2001-932915	20010502
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004521083	T2	20040715	JP 2002-537354	20010502

PRIORITY APPLN. INFO.:

US 2000-697317	A	20001027
WO 2000-US29528	W	20001027
US 1999-162230P	P	19991029
US 2000-179020P	P	20000131
WO 2000-US29582	A	20001027
WO 2001-US14245	W	20010502

OTHER SOURCE(S): MARPAT 136:335235

AB The present invention provides methods of **treating** or **preventing** vascular **diseases** caused by nitric oxide (NO) insufficiency. The methods encompass administering a composition comprising an antioxidant, a compound to **treat** cardiovascular **diseases**, a nitrosated compound, a compound that donates, transfers or releases NO, or is a NO synthase substrate, or endogenously stimulates NO synthesis, or stimulates levels of endothelium derived relaxing factor. In the said composition, a hydralazine compound may be an antioxidant, isosorbide mono-or dinitrate may be the compound to donate, transfer, release, or stimulate endogenous NO synthesis. The isosorbide may also elevate endogenous levels of endothelium-derived relaxing factor, or be a NO synthase substrate and angiotensin enzyme **inhibitor** may be nitrosated compound Disclosed in the invention is also a method to **treat**, or **prevent** Reynaud's syndrome by administering a **therapeutically** effective amount of an antioxidant, a NO donor, a nitrosated compound and novel sustained-release formulations (e.g. a transdermal patch).

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 33 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:97339 CAPLUS

DOCUMENT NUMBER: 137:212179

TITLE: Effect of vitamin A and β- **carotene** on experimental rat **liver** fibrosis

AUTHOR(S): Xu, Qing; Li, Shi; He, Ping; Liu, Yanjun; Wang, Jiejun; Zhang, Xiankang

CORPORATE SOURCE: Department of Medical Oncology, Changzheng Hospital, The Second Military Medical University, Shanghai, 200003, Peop. Rep. China

SOURCE: Yingyang Xuebao (2001), 23(4), 309-312
CODEN: YYHPA4; ISSN: 0512-7955

PUBLISHER: Yingyang Xuebao Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB To study the effect of vitamin A and β- **carotene** on rat **liver** fibrosis induced by CCl4 and the mechanism, the SD rats were divided to 4 groups. Normal group: olive oil 1 mL/kg s.c. injection twice a week for 9 w; CCl4 group: 50% CCl4 olive oil 1 mL/kg s.c. infection twice a week for 9 w; β- **carotene** group: after being **treated** with CCl4 for 3 w, β- **carotene** 150 mg/kg oral feeding twice a week for 6 w; Vitamin A group: after being **treated** with CCl4 for 3 w, vitamin A 0.1 g/kg s.c. infection for 6 w. The results showed that the **liver** pathol. and ultrastructural change, the content of rat **liver** hydroxyproline and the type I collagen RNA expression were observed In the **treated** groups, there was no significant **liver** damage and the fibrosis score was lower than the CCl4 group. The ultrastructural change was that in the vitamin A **treated** group the retinol ester droplets in **hepatic** stellate cells were more than normal control and CCl4 group, in the **carotene** group the retinol ester droplets were less than the normal control but more than the CCl4 group and the interstitial collagen fiber was less than the CCl4 group significantly.

The content of hydroxyproline (HYP) in the **treated** group was decreased significantly than that in the CCl4 control group. The value of type I (α2) collagen expression in the **treated** group was less than those in the CCl4 group. The dosage of vitamin A (0.1 g/kg s.c. injection twice a week for 6 w) and β- **carotene** (150 mg/kg oral feeding twice a week for 6 w) can reduce the severity of rat **liver** fibrosis significantly by **inhibiting** the loss of retinyl ester droplets from the **hepatic** stellate cells.

L14 ANSWER 34 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:51274 CAPLUS
DOCUMENT NUMBER: 136:96100
TITLE: Use of dammarane-type triterpenoid saponins
INVENTOR(S): Raj Kumar, Chinni Krishnan
PATENT ASSIGNEE(S): Raj Kumar, Sujatha, India; Argaet, Victor Peter
SOURCE: PCT Int. Appl., 125 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002003996	A1	20020117	WO 2001-AU837	20010712

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: AU 2000-8750 A 20000712
AU 2000-1146 A 20001031
OTHER SOURCE(S): MARPAT 136:96100
AB The present invention discloses the use of a dammarane-type triterpenoid saponin or derivative or pharmaceutically acceptable salt thereof for **treating** or **preventing** conditions, which are related to reduced nitric oxide levels, or which are **ameliorable** or **preventable** by augmentation of nitric oxide levels, within the human body, or for promoting responses requiring enhanced nitric oxide levels within the human body. A saponin extract obtained from Bacopa monnieri is shown to induce vascular nitric oxide production in rabbit aorta rings, to enhance growth of human neuroblastoma cells (neuronal filament formation), to reduce expression of amyloid precursor protein in HeLa cells transfected with the APP, to **prevent** leg cramps and decrease involuntary muscle movements in a patient, to cure chilblains in another patient, and to enhance the quantity and quality (protein and vitamin level) of milk in Jersey cows.
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 35 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:911827 CAPLUS
DOCUMENT NUMBER: 136:289018
TITLE: Lycopene **Inhibits** DNA Damage and **Liver** Necrosis in Rats **Treated** with Ferric Nitrilotriacetate

AUTHOR(S): Matos, Humberto R.; Capelozzi, Vera L.; Gomes, Osmar F.; Di Mascio, Paolo; Medeiros, Marisa H. G.
CORPORATE SOURCE: Departamento de Bioquimica, Instituto de Quimica, Universidade de Sao Paulo, Sao Paulo, SP, CEP 05513-970, Brazil
SOURCE: Archives of Biochemistry and Biophysics (2001), 396(2), 171-177
CODEN: ABBIA4; ISSN: 0003-9861
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Exptl. and epidemiol. evidence suggests that lycopene, a **carotenoid** present in tomatoes, tomato products, and several fruits and vegetables, may play a role in **preventing** certain cancers in humans. We have investigated the effect of lycopene pretreatment on lipid peroxidn., oxidative damage to DNA, and histopathol. changes in **liver** of animals subjected to i.p. ferric nitrilotriacetate (Fe-NTA) administration. Compared with control rats, **liver** of Fe-NTA-**treated** animals showed a significant increase in the 8-oxo-7,8-dihydro-2'-deoxyguanosine level and a 75% increase in malondialdehyde accumulation concomitant with histopathol. changes. Five days of lycopene pretreatment (10 mg/kg body weight, i.p.) almost completely **prevented liver** biomol. oxidative damage and protected the tissue against the observed histol. alterations. (c) 2001 Academic Press.
REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 36 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:591756 CAPLUS
DOCUMENT NUMBER: 136:31134
TITLE: Mechanism of up-regulated gap junctional intercellular communication during chemoprevention and chemotherapy of cancer
AUTHOR(S): Trosko, J. E.; Chang, C.-C.
CORPORATE SOURCE: Department of Pediatrics and Human Development, Institute of Environmental Toxicology, Michigan State University, East Lansing, MI, 48824, USA
SOURCE: Mutation Research (2001), 480-481, 219-229
CODEN: MUREAV; ISSN: 0027-5107
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review is given. To develop a strategy for efficacious intervention to **prevent** or **treat** various cancers, one must understand the basic mechanism(s) by which various anticancer dietary factors **prevent** or reverse the tumor promotion or progression phases. Carcinogenesis is a multistage, multimechanism process, involving the irreversible alteration of a stem cell (the "initiation" phase), followed by the clonal proliferation of the initiated stem cell (the "promotion" phase), from which the acquisition of the invasive and metastatic phenotypes are generated (the "progression" phase). While intervention to **prevent** or **treat** cancer could occur at each step, the objective of this presentation will focus on the rate limiting step, the promotion phase. Gap junctional intercellular communication (GJIC) was hypothesized to regulate growth control, differentiation, and apoptosis. Most normal, contact-**inhibited** cells have functional GJIC, while most, if not all, tumor cells have **dysfunctional** homologous or heterologous GJIC. Cancer cells are characterized by the lack of growth control, by the inability to terminally differentiate, and by resistance

to apoptosis. Chemical tumor promoters (phorbol esters, DDT, phenobarbital, unsatd. fatty acids, saccharin, etc.) **inhibit** GJIC in a reversible fashion and at doses above particular chemical thresholds. Various oncogenes (e.g. ras, raf, neu, src, mos) down-regulate GJIC while several tumor suppressor genes can up-regulate GJIC. Antitumor promoters (retinoids, **carotenoids**, green tea components) and antioncogene drugs (i.e. lovastatin) can up-regulate GJIC. Transfection of gap junction genes ("connexins") into GJIC-deficient tumor cells can restore GJIC, growth control, and reduce tumorigenicity. On the other hand, antisense gap junction genes can convert the phenotype of a non-tumorigenic cell to that of a tumorigenic one. Recently, a specific connexin knockout mouse was shown to have a higher frequency of spontaneous and induced **liver** cancers. Evidence from these studies clearly suggests that dietary factors can modulate GJIC by inducing various signal transducing systems. The modulation can either down-regulate GJIC and lead to tumor promotion or it can up-regulate GJIC and lead to suppression of the initiated cells. Multiple mechanisms of up- or down-regulation of GJIC exist, as well as multiple types of pre-malignant and malignant tumor cells that are unable able to have functional GJIC. GJIC can be down-regulated by mutations and by epigenetic means. Alteration of gene expression at the transcriptional, translational, or post-translational levels would require specific dietary **prevention** or **treatment** of cancer. In conclusion, if dietary **prevention** or **treatment** of cancer is to occur, it must **ameliorate** the growth-stimulatory effects, above threshold levels, of chems., growth factors, or hormones, that trigger various mitogenic/antiapoptotic signal transducing systems that block GJIC.

REFERENCE COUNT: 91 THERE ARE 91 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 37 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:338762 CAPLUS
DOCUMENT NUMBER: 134:362292
TITLE: Methods of determining individual hypersensitivity to a pharmaceutical agent from gene expression profile
INVENTOR(S): Farr, Spencer
PATENT ASSIGNEE(S): Phase-1 Molecular Toxicology, USA
SOURCE: PCT Int. Appl., 222 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001032928	A2	20010510	WO 2000-US30474	20001103
WO 2001032928	A3	20020725		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-165398P P 19991105
US 2000-196571P P 20000411

AB The invention discloses methods, gene databases, gene arrays, protein arrays, and devices that may be used to determine the hypersensitivity of individuals to a given agent, such as drug or other chemical, in order to **prevent** toxic side effects. In one embodiment, methods of identifying hypersensitivity in a subject by obtaining a gene expression profile of multiple genes associated with hypersensitivity of the subject suspected to be hypersensitive, and identifying in the gene expression profile of the subject a pattern of gene expression of the genes associated with hypersensitivity are disclosed. The gene expression profile of the subject may be compared with the gene expression profile of a normal individual and a hypersensitive individual. The gene expression profile of the subject that is obtained may comprise a profile of levels of mRNA or cDNA. The gene expression profile may be obtained by using an array of nucleic acid probes for the plurality of genes associated with hypersensitivity. The expression of the genes predetd. to be associated with hypersensitivity is directly related to **prevention** or repair of toxic damage at the tissue, organ or system level. Gene databases arrays and apparatus useful for identifying hypersensitivity in a subject are also disclosed.

L14 ANSWER 38 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:234330 CAPLUS
DOCUMENT NUMBER: 135:190338
TITLE: Protection against drug- and chemical-induced multiorgan toxicity by a novel IH636 grape seed proanthocyanidin extract
AUTHOR(S): Bagchi, D.; Ray, S. D.; Patel, D.; Bagchi, M.
CORPORATE SOURCE: Creighton University School of Pharmacy and Allied Health Professions, Omaha, NE, 68178, USA
SOURCE: Drugs under Experimental and Clinical Research (2001), 27(1), 3-15
CODEN: DECRDP; ISSN: 0378-6501
PUBLISHER: Bioscience Ediprint Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In previous studies, IH636 grape seed proanthocyanidin extract (GSPE, com. known as ActiVin) demonstrated excellent concentration- and dose-dependent free-radical-scavenging abilities in both in vitro and in vivo models and provided better protection than vitamins C, E and β- **carotene** . GSPE demonstrated significant cytotoxicity towards human breast, lung and gastric adenocarcinoma cells, while enhancing the growth and viability of normal human gastric mucosal cells and macrophage J774A.1 cells. In this study, the bioavailability and protective ability of GSPE were examined against acetaminophen-induced hepatotoxicity, amiodarone-induced pulmonary toxicity, doxorubicin-induced cardiotoxicity, CdCl2-induced nephrotoxicity, dimethylnitrosamine-induced spleen toxicity and O-ethyl-S,S-dipropyl phosphorodithioate (MOCAP)-induced neurotoxicity in mice. In each experiment, half of the test animals were orally fed GSPE for 7-10 days prior to drug/chemical exposure, while the other half received no GSPE. Parameters of anal. included changes in serum chemical [alanine aminotransferase (ALT), blood urea N and creatine kinase], histopathol. and integrity of genomic DNA. GSPE exposure prior to acetaminophen, amiodarone, doxorubicin, CdCl2 or dimethylnitrosamine **treatment**, provided near-complete protection in terms of serum chemical changes (ALT, blood urea N and creatine kinase) and **inhibition** of both forms of cell death, e.g., apoptosis and necrosis. DNA damage in various tissues triggered by these agents was reduced. Histopathol. examination of the organs reflected patterns similar to those of the serum chemical and DNA results. MOCAP exposure caused symptoms of severe neurotoxicity, coupled with serum chemical changes, in the absence of any significant genomic change

or brain pathol. GSPE afforded only partial protection to the brain tissue. These results suggest that GSPE is bioavailable and provides significant multiorgan protection against drug- and chemical-induced toxic assaults.

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 39 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:77951 CAPLUS
DOCUMENT NUMBER: 134:136704
TITLE: Use of plant polyphenols for **treating** iron overload
INVENTOR(S): Ghisalberti, Carlo
PATENT ASSIGNEE(S): Medis S.R.L. Medical Infusion Systems, Italy
SOURCE: Eur. Pat. Appl., 13 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1072265	A1	20010131	EP 1999-830464	19990720
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
EP 1074254	A2	20010207	EP 2000-115505	20000719
EP 1074254	A3	20020911		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				

PRIORITY APPLN. INFO.: EP 1999-830464 A 19990720

AB Compns. and a method of **treating** iron overloading in human subjects are described, using catechic- and flavonoid-structure plant polyphenols, orally administered alone or in combination thereof, or with common nutritional supplements to enhance the efficacy of **prevention** of the oxidative metabolic damages caused by excess iron. A capsule composition was prepared containing flavones and flavonols 500 mg, calcium carbonate 250 mg, Mg(OH)2 160 mg, Zn subcarbonate 15 mg, β-**carotene** 5 mg, and α-tocopherol 6 mg, with the balance being a nutritionally acceptable carrier.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 40 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:628008 CAPLUS
DOCUMENT NUMBER: 133:217724
TITLE: **Inhibitors** of serine protease activity, and methods and compositions for **treatment** of nitric oxide-induced clinical conditions
INVENTOR(S): Shapiro, Leland
PATENT ASSIGNEE(S): The Trustees of University Technology Corp., USA
SOURCE: PCT Int. Appl., 50 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 2000051623	A2	20000908	WO 2000-US5556	20000303
WO 2000051623	A3	20001214		

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 6489308	B1	20021203	US 2000-518097		20000303
PRIORITY APPLN. INFO.:			US 1999-123167P	P	19990305
			US 1999-156523P	P	19990929

AB A method of **treating** and **preventing diseases** is provided. In particular, compns. and methods of blocking **diseases** associated with aberrant levels of nitric oxide and facilitated by a serine proteolytic activity are disclosed, which consist of administering to a subject a **therapeutically** effective amount of a compound having a serine protease **inhibitory** activity. Among effective compds. are α1-antitrypsin and synthetic drugs mimicking some or all of the actions of α1-antitrypsin.

L14 ANSWER 41 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:604735 CAPLUS

DOCUMENT NUMBER: 133:321355

TITLE: Free radicals and grape seed proanthocyanidin extract: importance in human health and **disease prevention**

AUTHOR(S): Bagchi, Debasis; Bagchi, Manashi; Stohs, Sidney J.; Das, Dipak K.; Ray, Sidhartha D.; Kuszynski, Charles A.; Joshi, Shantaram S.; Pruess, Harry G.

CORPORATE SOURCE: Department of Pharmaceutical and Administrative Sciences, Creighton University School of Pharmacy & Allied Health Professions, Omaha, NE, 68178, USA

SOURCE: Toxicology (2000), 148(2-3), 187-197
CODEN: TXCYAC; ISSN: 0300-483X

PUBLISHER: Elsevier Science Ireland Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Free radicals have been implicated in over a hundred **disease** conditions in humans, including arthritis, hemorrhagic shock, atherosclerosis, advancing age, ischemia and reperfusion injury of many organs, Alzheimer and Parkinson **diseases**, gastrointestinal **dysfunctions**, tumor promotion and carcinogenesis, and AIDS. Antioxidants are potent scavengers of free radicals and serve as **inhibitors** of neoplastic processes. Many synthetic and natural antioxidants can have beneficial effects on human health and **disease prevention.** The structure-activity relationship, bioavailability, and **therapeutic** efficacy of the antioxidants differ extensively. Oligomeric proanthocyanidins, naturally occurring antioxidants in fruits, vegetables, nuts, seeds, flowers and bark, have many biol., pharmacol., and **therapeutic** activities against free radicals and oxidative stress. In this study we have assessed the concentration- or dose-dependent free radical scavenging ability of the IH-636 grape seed proanthocyanidin extract (GSPE) both in vitro and in vivo and compared the scavenging ability of GSPE with vitamins C, E, and β- **carotene.** GSPE was highly bioavailable and provided

greater protection against free radicals and free radical-induced lipid peroxidn. and DNA damage than vitamins C, E, and β- **carotene** . GSPE also showed cytotoxicity to human breast, lung, and gastric adenocarcinoma cells, while enhancing the growth and viability of normal human gastric mucosal cells. The comparative protective effects of GSPE, vitamins C, and E were examined in tobacco-induced oxidative stress and apoptotic cell death models in human oral keratinocytes. The oxidative tissue damage was determined by lipid peroxidn. and DNA fragmentation, while the apoptotic cell death was assessed by flow cytometry. GSPE provided better protection compared to vitamins C and E alone and in combination. GSPE also protected against acetaminophen overdose-induced **liver** and kidney damage by regulating bcl-XL gene, DNA damage, and presumably by decreasing oxidative stress. GSPE protected against myocardial ischemia-reperfusion injury and myocardial infarction in rats. GSPE also upregulated the bcl2 gene and downregulated the oncogene c-myc. Topical application of GSPE enhanced the sun protection factor in humans and GSPE supplementation **ameliorated** chronic pancreatitis in humans. Thus, GSPE provides excellent protection against oxidative stress and free radical-mediated tissue injury.

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 42 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:286153 CAPLUS
DOCUMENT NUMBER: 130:329183
TITLE: Pharmaceutical grade valerian, black cohosh, vitex agnus-castus, bilberry and milk thistle, and method for determining thereof
INVENTOR(S): Khwaja, Tasneem A.; Friedman, Elliot P.
PATENT ASSIGNEE(S): Pharmaprint, Inc., USA; University of Southern California
SOURCE: PCT Int. Appl., 138 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9921006	A1	19990429	WO 1998-US22505	19981023
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, US, US, US, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2307339	AA	19990429	CA 1998-2307339	19981023
AU 9913632	A1	19990510	AU 1999-13632	19981023
PRIORITY APPLN. INFO.:			US 1997-955410	A2 19971023
			US 1997-955417	A2 19971023
			US 1997-956610	A2 19971023
			US 1997-956611	A2 19971023
			US 1997-956615	A2 19971023
			WO 1998-US22505	W 19981023

AB The present invention relates generally to botanical valerian materials and methods for making such materials in medicinally useful and

pharmaceutically acceptable forms. More particularly, the present invention relates to the use of compositional and bioactivity fingerprints in the processing of valerian, black cohosh, V. agnus-castus, bilberry or milk thistle materials to produce botanical products, such as drugs, which qualify as pharmaceutical grade compns. which are suitable for use in clin. or veterinary settings to **treat** and/or **ameliorate** **diseases**, disorders or conditions.

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 43 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:423549 CAPLUS
DOCUMENT NUMBER: 129:122000
TITLE: Free radical-scavenging effect of a designed antioxidant drink: an electron spin resonance study
AUTHOR(S): Hiramatsu, Midori; Kumari, M. V. Ramana; Yoneda, Tadashi; Sakamoto, Michiko; Toriizuka, Kazuo
CORPORATE SOURCE: Division of Medical Science, Institute for Life Support Technology, Yamagata Technopolis Foundation, Yamagata, 990, Japan
SOURCE: Food Factors for Cancer Prevention, [International Conference on Food Factors: Chemistry and Cancer Prevention], Hamamatsu, Japan, Dec., 1995 (1997), Meeting Date 1995, 375-379. Editor(s): Ohigashi, Hajime. Springer: Tokyo, Japan.
CODEN: 66HYAL
DOCUMENT TYPE: Conference
LANGUAGE: English
AB The designed antioxidant drink β-CATECHIN includes ascorbic acid, tea extract, dunaliella **carotene**, and vitamin E. β-CATECHIN scavenges free radicals and singlet oxygen and **inhibits** lipid peroxidn. Administration of β-CATECHIN drink for 4 wk decreased lipid peroxide levels in the cortex and hippocampus of rat brain but did not affect levels in the **liver**, kidney, and serum. It also increased superoxide dismutase (SOD) activity in the **liver** of rat. In the iron-induced epileptic model of rat brain, β-CATECHIN drink **inhibited** elevated lipid peroxide formation and **prevented** the decrease of SOD activity in the cortex. β-CATECHIN drink may be a prophylactic food for neurol. **diseases** related to aging involving free radicals.
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 44 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:201000 CAPLUS
DOCUMENT NUMBER: 128:294258
TITLE: Antigoitrogenic effect of combined supplementation with dl-α-tocopherol, ascorbic acid and β-**carotene** and of dl-α-tocopherol alone in the rat
AUTHOR(S): Mutaku, J. F.; Many, M. -C.; Colin, I.; Denef, J. -F.; Van Den Hove, M. -F.
CORPORATE SOURCE: Laboratory of Histology, Medical School, Catholic University of Louvain, Brussels, B-1200, Belg.
SOURCE: Journal of Endocrinology (1998), 156(3), 551-561
CODEN: JOENAK; ISSN: 0022-0795
PUBLISHER: Journal of Endocrinology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effects of vitamins (dl-α-tocopherol, ascorbic acid, β-

carotene), free radical scavengers, and lipid peroxidn. **inhibitors** were analyzed in male Wistar rats made goitrous by feeding a low-iodine diet (<20 μg I/kg) and perchlorate (1% in drinking water) for 4, 8, 16, and 32 days. Control and goitrous rats received for at least 16 days before killing a diet containing 0.6% vitamin E as dl-α-tocopherol acetate, 1.2% vitamin C as ascorbic acid, and 0.48% β- **carotene**, either simultaneously (vitamin cocktail) or sep. The **treatments** led to a 5-fold increase of vitamin E in the thyroid gland, a 24-fold increase in the **liver**, and a 3-fold increase in the blood plasma. In control rats, the vitamin cocktail increased slightly the thyroid weight, with little changes in thyroid function parameters. During iodine deficiency, the vitamin cocktail or vitamin E alone reduced the rate of increase in thyroid weight and DNA and protein contents, as well as the proportion of [3H]thymidine-labeled thyroid follicular cells, but not that of labeled endothelial cells. Plasma triiodothyronine, thyroxine, and TSH levels and thyroid iodine content and concentration, as well as relative vols. of glandular compartments were not modified. The proportion of necrotic cells rose from 0.5% in normal animals to .apprx.2% after 16 days of goiter development. No protective effect of the vitamins was observed The results suggest that these vitamins, particularly vitamin E, modulate one of the regulatory cascades involved in the control of thyroid follicular cell growth, without interfering with the proliferation of endothelial cells.

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 45 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:678387 CAPLUS
DOCUMENT NUMBER: 127:306849
TITLE: Effects of β- **carotene** and canthaxanthin on aflatoxicosis in broilers
AUTHOR(S): Okotie-Eboh, G. O.; Kubena, L. F.; Chinnah, A. D.; Bailey, C. A.
CORPORATE SOURCE: Veterans Affairs Medical Center, Houston, TX, 77030, USA
SOURCE: Poultry Science (1997), 76(10), 1337-1341
CODEN: POSCAL; ISSN: 0032-5791
PUBLISHER: Poultry Science Association, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In 2 + 3 factorial expts., 240 broiler chicks were fed diets containing 0, 0.01, and 0.02% β- **carotene** or canthaxanthin with or without 5 ppm aflatoxin to determine the effects of these two **carotenoids** on the health and well-being of broilers subjected to aflatoxin poisoning. Neither β- **carotene** nor canthaxanthin was effective at overcoming the growth-depressing effects of aflatoxin. Relative **liver** wts. were significantly higher in broilers receiving dietary aflatoxin in the presence of β- **carotene** but not canthaxanthin. Canthaxanthin and β- **carotene** had no effect on antibody production against infectious bursal **disease** (IBD). Interestingly, the secondary antibody production against IBD was enhanced by the presence of aflatoxin in the diet. Canthaxanthin significantly increased the concns. of cholesterol, total protein, uric acid, and triglycerides, all of which were significantly depressed by aflatoxin. β- **Carotene** did not affect any of the measured blood analytes. There was a significant interaction between canthaxanthin and aflatoxin with respect to creatine kinase activity. The creatine kinase activity decreased as the dietary canthaxanthin increased in the presence of aflatoxin. Thus, β- **carotene** is not effective at **ameliorating** aflatoxicosis in broiler chickens but

canthaxanthin may be somewhat effective with respect to certain clin. blood chemical indicators.

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 46 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1997:425981 CAPLUS
DOCUMENT NUMBER: 127:126651
TITLE: Antikeratolytic-wound healing compositions and methods for preparing and using same
INVENTOR(S): Martin, Alain
PATENT ASSIGNEE(S): Warner-Lambert Co., USA
SOURCE: U.S., 41 pp., Cont.-in-part of U.S. Ser. No. 268,772, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 28
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5641814	A	19970624	US 1995-445808	19950522
JP 2002356421	A2	20021213	JP 2002-82387	19920115
JP 2003231632	A2	20030819	JP 2002-362245	19920115
CA 2191605	AA	19960111	CA 1995-2191605	19950622
WO 9600572	A1	19960111	WO 1995-US7941	19950622
W: AU, CA, JP, MX, NZ, SG				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9528707	A1	19960125	AU 1995-28707	19950622
AU 701301	B2	19990121		
EP 768877	A1	19970423	EP 1995-924046	19950622
R: BE, CH, DE, DK, ES, FR, GB, GR, IT				
JP 10502344	T2	19980303	JP 1995-503322	19950622
NZ 288995	A	20010223	NZ 1995-288995	19950622
ZA 9505409	A	19970401	ZA 1995-5409	19950629
US 5981606	A	19991109	US 1998-19316	19980205
PRIORITY APPLN. INFO.:			US 1991-663500	B2 19910301
			US 1993-53922	B1 19930426
			US 1994-268772	B2 19940630
			JP 1992-505329	A3 19920115
			US 1994-224936	B1 19940408
			US 1995-445808	A 19950522
			WO 1995-US7941	W 19950622
			US 1997-37730P	P 19970202

AB This invention pertains to **therapeutic** antikeratolytic-wound healing compns. The compns. comprise a **therapeutically** effective amount of an antikeratolytic agent and a wound healing composition In one embodiment the wound healing composition comprises (a) pyruvate; (b) an antioxidant; and (c) a mixture of saturated and unsatd. fatty acids. The **therapeutic** antikeratolytic-wound healing compns. may be utilized in a wide variety of topical and ingestible pharmaceutical products. This invention also relates to methods for preparing and using the **therapeutic** antikeratolytic-wound healing compns. and the pharmaceutical products in which the compns. may be used. The antikeratolytic agent is selected from the group consisting of salicylic acid, lactic acid, and urea. A wound-healing composition containing Na pyruvate 2, vitamin E 1, chicken fat 2 %, live yeast cell derivative 2400 U, shark

liver oil 3, petrolatum 64, mineral oil 22.53, paraffins 5, and emulsifier 0.2 % was combined with an antikeratolytic agent to **prevent** scaling and dryness of the injured cells.

L14 ANSWER 47 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1997:133411 CAPLUS
DOCUMENT NUMBER: 126:234807
TITLE: Antioxidant actions of β- **carotene** in liposomal and microsomal membranes: role of **carotenoid**-membrane incorporation and α-tocopherol
AUTHOR(S): Liebler, Daniel C.; Stratton, Steven P.; Kaysen, Kathryn L.
CORPORATE SOURCE: Department of Pharmacology and Toxicology, University of Arizona, Tucson, AZ, 85721-0207, USA
SOURCE: Archives of Biochemistry and Biophysics (1997), 338(2), 244-250
CODEN: ABBIA4; ISSN: 0003-9861
PUBLISHER: Academic
DOCUMENT TYPE: Journal
LANGUAGE: English
AB β- **Carotene** and other **carotenoids** are widely regarded as biol. antioxidants. However, recent clin. trials indicate that β- **carotene** supplements are not effective in **disease prevention** and raise questions about the biol. significance of **carotenoid** antioxidant actions. To further explore this issue, we have reevaluated the antioxidant actions of β- **carotene** in liposomal and biol. membrane systems. In dilinoleoylphosphatidylcholine liposomes in which 0.35 mol % β- **carotene** was incorporated into the bilayer during liposome preparation, the **carotenoid inhibited** lipid peroxidn. initiated by 10 mM azobis[amidinopropane HCl] (AAPH). In **carotenoid**-free liposome suspensions to which the same amount of β- **carotene** was added, no antioxidant effect was observed Supplementation of rat **liver** microsomes with β- **carotene** in vitro yielded microsomes containing 1.7 nmol β- **carotene** mg-1 and 0.16 nmol α-tocopherol mg-1 microsomal protein. In β- **carotene** supplemented microsomes incubated with 10 mM AAPH under an air atmospheric, lipid peroxidn. did not occur until α-tocopherol was depleted by approx. 60%. β- **Carotene** exerted no apparent antioxidant effect and was not significantly depleted in the incubations. Similar results were obtained when the incubation was done at 3.8 torr O2. In **liver** microsomes from Mongolian gerbils fed β- **carotene** -supplemented diets, β- **carotene** levels were 16-37% of α-tocopherol levels. The kinetics of AAPH-induced lipid peroxidn. were not different in β- **carotene**-supplemented microsomes than in microsomes from unsupplemented animals, although the kinetics of β- **carotene** and α-tocopherol depletion were similar. The results indicate that β- **carotene** is ineffective as an antioxidant when added to preformed lipid bilayer membranes and that α-tocopherol is a much more effective membrane antioxidant than β- **carotene**, regardless of the method of **carotenoid** -membrane incorporation. These results support a reevaluation of the proposed antioxidant role for β- **carotene** in biol. membranes.

L14 ANSWER 48 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:577902 CAPLUS
DOCUMENT NUMBER: 125:257209

TITLE: Iodine and cod **liver** oil-based products for skin and hair **treatment**
INVENTOR(S): Dixon, Gary W.
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 21 pp., Cont.-in-part of U.S. Ser. No. 184,839, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5554361	A	19960910	US 1995-377501	19950124
US 5700457	A	19971223	US 1996-653151	19960524
PRIORITY APPLN. INFO.:			US 1994-184839 B2	19940121
			US 1995-377501 A3	19950124

AB A processed product for hair and skin **treatment**, having binary and tertiary fluid phase levels prior to remixing and **therapeutic** use is disclosed. The invention discloses defined amts. of admixed components including an iodine complex having tincture of iodine solution and povidone-iodine compound, a diluting fluid complex having a water and mineral oil constituent, and a cod **liver** oil component, which, after admixing, are ambiently exposed to a photon-light-energy component from sunlight or substantially equivalent artificial light to produce a processed product having at least binary product reaction fluid levels and containing a nucleophilic iodinated cod **liver** oil compound The composition is mixed prior to **therapeutic** application of targeted hair, skin, mucosal or internal areas of a human or animal, mixing the fluid levels to provide synergistic properties and enhanced delivery of the remaining iodine-reaction components and the iodinated cod **liver** oil compound contained in the product, enhancing the effect and delivery to targeted areas of vitamins A and D and other constituents in the processed reaction product. Compns. containing cod **liver** oil 5.0, Betadine solution 10-15.6, red iodine solution 7.4-12, margarine 30.0, water 120.0, and mineral oil 399.0 g, resp., were used as topical antibacterial, first aid, and skin wound healing agents.

L14 ANSWER 49 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:318495 CAPLUS
DOCUMENT NUMBER: 124:352761
TITLE: Antifungal-wound healing compositions containing pyruvates and antioxidants and fatty acids
INVENTOR(S): Martin, Alain
PATENT ASSIGNEE(S): Warner-Lambert Company, USA
SOURCE: PCT Int. Appl., 114 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 28
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9603149	A1	19960208	WO 1995-US8551	19950707
W: AU, CA, JP, MX, NZ, SG				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5663208	A	19970902	US 1995-445831	19950522
AU 9530042	A1	19960222	AU 1995-30042	19950707

AU 701179	B2	19990121			
EP 773795	A1	19970521	EP 1995-926203		19950707
R: BE, CH, DE, DK, ES, FR, GB, GR, IT, LI					
JP 10503200	T2	19980324	JP 1995-505755		19950707
ZA 9506117	A	19970421	ZA 1995-6117		19950721
PRIORITY APPLN. INFO.:			US 1994-279462	A	19940722
			US 1995-445831	A	19950522
			US 1991-663500	B1	19910301
			US 1993-53922	B2	19930426
			WO 1995-US8551	W	19950707

AB **Therapeutic** antifungal-wound healing compns. comprise (a) pyruvate; (b) an antioxidant; and (c) a mixture of saturated and unsatd. fatty acids. The **therapeutic** antifungal-wound healing compns. may be utilized in a wide variety of topical and oral pharmaceutical products. A wound healing composition contained sodium pyruvate 2, vitamin E 1, chicken fat 2, LYCD 2400U, shark **liver** oil 3, petrolatum 64, mineral oil 22.53, paraffin 5, and emulsifier 0.2%. The above composition was applied on a 3 cm full thickness longitudinal incision on the back of hairless mice once/day for 7 days. The composition was significantly better than preparation H and there was less scar tissue present at day 7 on the skin.

L14 ANSWER 50 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:171907 CAPLUS
DOCUMENT NUMBER: 124:212140
TITLE: Anti-inflammatory wound healing compositions containing pyruvates and antioxidants and fatty acids
INVENTOR(S): Martin, Alain
PATENT ASSIGNEE(S): Warner-Lambert Co., USA
SOURCE: PCT Int. Appl., 113 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 28
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 9600584	A1	19960111	WO 1995-US7942		19950622
W: AU, CA, JP, MX, NZ, SG					
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
US 5648380	A	19970715	US 1995-445845		19950522
AU 9529080	A1	19960125	AU 1995-29080		19950622
AU 701454	B2	19990128			
EP 759783	A1	19970305	EP 1995-924660		19950622
R: BE, CH, DE, DK, ES, FR, GB, GR, IT, LI					
JP 10502345	T2	19980303	JP 1995-503323		19950622
NZ 289287	A	20010223	NZ 1995-289287		19950622
ZA 9505408	A	19970401	ZA 1995-5408		19950629
PRIORITY APPLN. INFO.:			US 1994-268429	A	19940630
			US 1995-445845	A	19950522
			US 1991-663500	B1	19910301
			US 1993-53922	B2	19930426
			WO 1995-US7942	W	19950622

AB **Therapeutic** anti-inflammatory wound healing compns. comprise a **therapeutically** effective amount of one or more anti-inflammatory agents and a wound healing composition A wound healing composition contained sodium pyruvate 2 (I), vitamin E (II) 1, chicken fat 2 (III), shark **liver** oil 3, petrolatum 64, mineral oil 22.53, paraffin 5, emulsifier 0.2% and

live yeast cell derivative 2400 U. The composition was significantly better wound healing composition than controls with no I, II, and III in healing incision wound in mice skin.

L14 ANSWER 51 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:171900 CAPLUS
DOCUMENT NUMBER: 124:212068
TITLE: Antikeratolytic wound healing compositions containing pyruvates and antioxidants and fatty acids
INVENTOR(S): Martin, Alain
PATENT ASSIGNEE(S): Warner-Lambert Co., USA
SOURCE: PCT Int. Appl., 107 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 28
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 9600572	A1	19960111	WO 1995-US7941		19950622
W: AU, CA, JP, MX, NZ, SG					
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
US 5641814	A	19970624	US 1995-445808		19950522
AU 9528707	A1	19960125	AU 1995-28707		19950622
AU 701301	B2	19990121			
EP 768877	A1	19970423	EP 1995-924046		19950622
R: BE, CH, DE, DK, ES, FR, GB, GR, IT					
JP 10502344	T2	19980303	JP 1995-503322		19950622
NZ 288995	A	20010223	NZ 1995-288995		19950622
ZA 9505409	A	19970401	ZA 1995-5409		19950629
PRIORITY APPLN. INFO.:			US 1994-268772	A	19940630
			US 1995-445808	A	19950522
			US 1991-663500	B2	19910301
			US 1993-53922	B1	19930426
			WO 1995-US7941	W	19950622

AB **Therapeutic** antikeratolytic wound healing compns. comprise a **therapeutically** effective amount of one or more antikeratolytic agents and a wound healing composition A wound healing composition contained sodium pyruvate 2 (I), vitamin E (II) 1, chicken fat 2 (III), shark **liver** oil 3, petrolatum 64, mineral oil 22.53, paraffin 5, emulsifier 0.2% and live yeast cell derivative 2400 U. The composition was significantly better wound healing composition than controls with no I, II, and III in healing incision wound in mice skin.

L14 ANSWER 52 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:49250 CAPLUS
DOCUMENT NUMBER: 124:115923
TITLE: Protection by multiple antioxidants against lipid peroxidation in rat **liver** homogenate
AUTHOR(S): Chen, Hao; Tappel, Al
CORPORATE SOURCE: School Medicine, Univ. Washington, Seattle, WA, USA
SOURCE: Lipids (1996), 31(1), 47-50
CODEN: LPDSAP; ISSN: 0024-4201
PUBLISHER: AOCS Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The purpose of this study was to test the hypothesis that multiple antioxygenic nutrients provide increased protection against lipid peroxidative damage to rat **liver.** Rats were fed diets (i) deficient in vitamin E and selenium (Diet 1), (ii) supplemented with vitamin E and selenium (Diet 2), (iii) supplemented with (ii) and in addition Trolox C, N-acetylcysteine, coenzyme Q0, and (+)-catechin (Diet 3), or (i.v.) supplemented with (ii) and in addition β- **carotene,** ascorbic acid palmitate, canthaxanthin, and coenzyme Q10 (Diet 4). **Liver** homogenates were obtained from three rats fed each of the diets for six weeks and were incubated at 37°C up to two hours with and without exogenous tertiary-Bu hydroperoxide (TBHP) or Cu2+. Lipid peroxidn. was determined by measurement of thiobarbituric acid substances. Diets 2 and 3 significantly protected against in vivo **hepatic** lipid peroxidn., and this protection was augmented by Diet 4. Diets 2, 3, and 4 were protective against mild oxidation induced by TBHP or Cu2+. During incubations with exogenous TBHP and Cu2+, there were only small differences between diets supplemented with antioxidants in **inhibition** of lipid peroxidn., indicating that diets supplemented with vitamin E and selenium (Diet 2) may have provided the maximal protection for **liver.** The possible mechanisms of protection provided by multiple antioxidants in diets were discussed. Protection by multiple antioxidants against lipid peroxidn. may translate to **prevention** of peroxidative damage to human tissue, a factor in human **disease.**

L14 ANSWER 53 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:724021 CAPLUS
DOCUMENT NUMBER: 123:197435
TITLE: **Inhibition** of 3'-methyl-4-dimethylaminoazobenzene-induced hepatocarcinogenesis in rat by dietary β- **carotene**: changes in **hepatic** antioxidant defense enzyme levels
AUTHOR(S): Sarkar, Alok; Mukherjee, Biswajit; Chatterjee, Malay
CORPORATE SOURCE: Department of Pharmaceutical Technology, Jadavpur University, Calcutta, 700 032, India
SOURCE: International Journal of Cancer (1995), 61(6), 799-805
CODEN: IJCNAW; ISSN: 0020-7136
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The dietary administration of β- **carotene** (BC) daily was found to be highly effective in reducing hepatocarcinogenesis in male Sprague-Dawley rats fed 3'-methyl-4-dimethylaminoazobenzene (3'-Met-DAB). The anticancer efficacy of BC was evaluated by estimating some possible preneoplastic and neoplastic **hepatic** antioxidant markers, such as glutathione (GSH) and related enzymes, namely glutathione S-transferases (GSHT, with varying substrate specificities), γ-glutamyl transpeptidase (GGT), glutathione peroxidase (GPX), and reductase. BC proved to be an effective antineoplastic substance in a long-term **treatment.** Furthermore, BC limited the exponential increase of GSH, GGT, GSH-T, and GPX both in the hyperplastic nodules (HNs) and surrounding **liver** (NNSP) areas compared with carcinogen control (3'-Met-DAB) rats during a long-term **treatment**. Early marginal changes in GSH, GGT, and GSHT (with 1-chloro-2,4-dinitrobenzene as a substrate) activities in BC-**treated** groups for 10 days compared with carcinogen (3'-Met-DAB once) control rats entail the participation of BC in the initial stages of hepatocarcinogenesis. A decrease in the number of hyperplastic nodules and the total **liver** parenchyma they occupy was observed in BC-**treated** groups. The HNs and NNSP **liver** areas were directly correlated with **hepatic** BC and vitamin A content and with rates and patterns of

hepatic antioxidant defense enzymes. The results confirm that BC is protective in limiting the action of 3'-Met-DAB during the initiation phase of hepatocarcinogenesis.

L14 ANSWER 54 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1994:400552 CAPLUS
DOCUMENT NUMBER: 121:552
TITLE: Correlation between the cytoprotective effect of beta-**carotene** and its gastric mucosal level in indomethacin (IND)-**treated** rats with or without acute surgical vagotomy
AUTHOR(S): Kiraly, Agnes; Suto, G.; Vincze, A.; Toth, Gy; Matus, Z.; Mozsik, Gy
CORPORATE SOURCE: Dep. Chem., Med. Univ., PECS, Hung.
SOURCE: Acta Physiologica Hungarica (1992), 80(1-4), 213-18
CODEN: APHHDU; ISSN: 0231-424X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB As to earlier observations that beta-**carotene** **prevents** the development of gastric mucosal injury produced by different noxious agent, however, its cytoprotective effect can be abolished by acute surgical vagotomy. The aim of this study was to evaluate the possible correlation between the gastric mucosal cytoprotective effect of beta-**carotene** and its gastric mucosal level in rats **treated** with IND. The gastric mucosal damage was produced by the administration of IND (20 mg/kg s.c.). The instillation of beta-**carotene** and acute surgical vagotomy (ASV) or SHAM operation were carried out 30 min before IND **treatment**. The rats were sacrificed 4 h after IND application, and the number and severity of gastric mucosal erosions were noted. The blood of rats was collected quant., the **liver** and the gastric mucosa were removed, and the beta-**carotene** and vitamin A level of the gastric mucosa, serum and **liver** were measured with HPLC. Beta-**carotene** induced gastric cytoprotection in SHAM-operated rats **treated** with IND but its effect disappeared after ASV. Although the beta-**carotene** level of the gastric mucosa increased its concentration was not elevated in the serum of intact and vagotomized animals either. Vitamin A formation was not detected in the **liver** of animals with or without ASV. It was concluded that the lack of intake of beta-**carotene** into the gastric mucosa can not play etiol. role in the failure of gastric cytoprotection of rats with acute bilateral surgical vagotomy.

L14 ANSWER 55 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1993:37926 CAPLUS
DOCUMENT NUMBER: 118:37926
TITLE: Complex dietary health-promoting compositions
INVENTOR(S): Baritiu, Georges; Ciustea, Gheorghe
PATENT ASSIGNEE(S): Fr.
SOURCE: Eur. Pat. Appl., 6 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 511895 R: CH, DE, LI	A1	19921104	EP 1992-401107	19920421
FR 2675996	A1	19921106	FR 1991-5286	19910430

FR 2675996 B1 19931015
PRIORITY APPLN. INFO.: FR 1991-5286 A 19910430
AB Health-promoting dietary compns. containing vitamins, metal salts, etc. are described. The compns. are proposed to have energizing, strengthening, immunostimulating, antimutagenic, anticancer, infarction-**preventing**, and other health-promoting properties.

L14 ANSWER 56 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1984:525996 CAPLUS
DOCUMENT NUMBER: 101:125996
TITLE: Porphyrin photosensitization and **carotenoid** protection in mice; in vitro and in vivo studies
AUTHOR(S): Mathews-Roth, Micheline M.
CORPORATE SOURCE: Dep. Med., Harvard Med. Sch., Boston, MA, 02115, USA
SOURCE: Photochemistry and Photobiology (1984), 40(1), 63-7
CODEN: PHCBAP; ISSN: 0031-8655
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Mice made porphyric with collidine received either of the pigments β-**carotene** or canthaxanthin. When the mice were exposed to ambient light and to weekly doses of black light, the **treated** animals developed less skinfold thickness than did porphyric mice receiving placebo, indicating some protection from photosensitization in the mice receiving pigments. Photosensitized **inhibition** of succinate oxidation in **liver** exts. prepared from porphyric mice was also reduced in those animals that had received the pigments. A singlet O-free radical trap, 1,3-diphenylisobenzofuran (DPBF), was added to the isolated epidermis of collidine-porphyric mice which had received either β-**carotene**, canthaxanthin, or placebo. The absorbance of DPBF at 415 nm in epidermis prepared from mice receiving either of the pigments decreased less after light exposure of the prepared epidermis than did the absorbance of DPBF in epidermis prepared from porphyric mice receiving placebo and similarly light exposed. These expts. suggest that the administered **carotenoids** quenched to some degree photochem. reactions occurring in the porphyric epidermis.

L14 ANSWER 57 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1966:459377 CAPLUS
DOCUMENT NUMBER: 65:59377
ORIGINAL REFERENCE NO.: 65:11098h,11099a-b
TITLE: The role of **carotenoids** and vitamin A in encephalomalacia
AUTHOR(S): Prohaszka, L.
CORPORATE SOURCE: Hungarian Acad. Sci., Budapest
SOURCE: British Journal of Nutrition (1966), 20(3), 533-40
CODEN: BJNUAV; ISSN: 0007-1145
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In encephalomalacic chicks, the **hepatic** content of **carotenoids** (I) was <0.30 mg./100 g. **liver** as compared with normal values of 0.4-1.0 mg./100 g. In chicks fed a diet containing 10% rancid cottonseed oil (peroxide value 33), the incidence of encephalomalacia was decreased by the oral administration of ethyl β-apo-8'-carotenoate (II) (5 mg. daily for 7 days). A I deficiency is thus not merely a concomitant sign of encephalomalacia, but also has a causative role, since sufficient I reserves confer a certain protection against the **disease**. Although the incidence of the **disease** was reduced by **treatment** with II, the **hepatic** I concentration remained significantly less than that observed in chicks fed a normal diet despite the large amount of added I. The ability

of the chick to accumulate II in **liver** appeared to depend both on the age of the chicks and on the vitamin A (III) content of their **livers.** In chicks 4-5 weeks old or in those with III reserves >800 I.U./g. **liver**, the accumulation of I in the **liver** was only 10% of that observed in chicks more than 7 weeks old or in those with III reserves <100-200 I.U./g. These 2 factors which **inhibit** the accumulation of I in the **liver** simultaneously predisposed the chicks to encephalomalacia; the observation that encephalomalacia occurs exclusively in chicks 3-6 weeks old substantiated this finding. 17 references.

L14 ANSWER 58 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1948:34672 CAPLUS
DOCUMENT NUMBER: 42:34672
ORIGINAL REFERENCE NO.: 42:7385c-g
TITLE: The influence of antioxidative and dispersing agents on vitamin A absorption: **therapeutic** implications in endogenous hypovitaminemia A
AUTHOR(S): Popper, Hans; Steigmann, Frederick; Dyniewicz, Hattie A.
CORPORATE SOURCE: Cook County Hosp., Chicago
SOURCE: Gastroenterology (1948), 10, 987-1000
CODEN: GASTAB; ISSN: 0016-5085
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB cf. C.A. 39, 957.7. Extension of previous expts. failed to show any influence of tocopherol, wheat-germ oil, or lecithin upon the response of the plasma vitamin A (I) level to the intake of large doses of I or **carotene**, despite variations in the amount of I, **carotene**, or tocopherol given. The **hepatic** I concentration of I-deficient rats after feeding one dose of I or **carotene** is not influenced by simultaneous administration of tocopherol. However, after administration of repeated doses of I or **carotene**, it is far higher in animals receiving supplements of tocopherol. The conclusion is drawn that the antioxidant tocopherol does not protect I in the intestine, in the blood, or during deposition into the **liver**, but does protect it when it is already stored in the **liver.** Tocopherol apparently **inhibits** destruction of I in the **liver.** Administration of I in aqueous emulsion leads to much higher tolerance curves; this indicates better absorption than when the same amount of I is administered in oil. The improvement resulting from replacing the oily with the aqueous menstruum is especially marked in conditions such as **liver disease**, in which relatively flat curves follow administration of I in oily solution Apparently the defect of absorption after administration of I in oil can thus be corrected. Administration of I in aqueous solution appears indicated in endogenous hypovitaminemia A.

L14 ANSWER 59 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1946:28112 CAPLUS
DOCUMENT NUMBER: 40:28112
ORIGINAL REFERENCE NO.: 40:5516e-i,5517a-g
TITLE: Report of the director for the year ending October 31, 1944
AUTHOR(S): Slate, William L.
SOURCE: Conn. (New Haven) Agr. Expt. Sta., Bull. (1945), 484, 103 pp.
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Brief progress reports are presented. DDT was effective against insects

attacking the quince. The use of sticker added to spraying materials decreased the number of sprayings required. Fruit and foliage, with or without sticker, in general, contained over-tolerance residues of Pb arsenate. Cryolite as a dust was more effective against Mexican bean beetles than as a spray. DDT, rotenone in derris, cryolite, and Bordeaux mixture were studied on various fruits and vegetables. DDT offered some promise against the adult form of wireworm. MeBr was effective in the control of the meadow mouse, Microtus pennsylvanicus. The introduction of chems. such as 8-hydroxyquinoline sulfate, 8-hydroxyquinoline benzoate into trees before the Dutch elm **disease** attacks the tree, offered promise as a means of combating the **disease.** Disodium ethylenebisdithiocarbamate and other chems. were used to study the mechanism by which fungicides act. Synergism, antagonism, the effect of structure of organic compns., and the ability of certain chems. to **inhibit** the action of certain cell components such as amines, amino acids, metals, and sugars is being investigated. p-Aminobenzenesulfanilamide, hydroquinone, ZnSO4, dextrose, and maltose were tested against X **disease** of peach trees. The first listed was 100% effective. The effect of cation (Ca and K) balance of the soil on root and tuber **diseases** and of toxic plant decomposition products showed that the Ca:K ratio was important in relation to scab of potatoes and club root of cabbage and that decomposition products of mulches of timothy and rye affected the number and weight of strawberries produced. Soybean refuse was most satisfactory as a mulch. Red clover and excelsior were intermediate. Black root symptoms were used as a measure of toxicity. It is suggested that the substances leached from the mulches are nontoxic, but that under reduced O tension beneath the soil they are reduced to the toxic compns. Plant-tissue tests and soil tests were combined to determine available nutrients and uptake of nutrients as a part of the State's soil testing service. The combination proved valuable. Millet, Sudan grass, soybeans, lupines, cowpeas, and vetch were grown to determine the effect of soil acidity on green manures. Cowpeas grew best, followed by soybeans, millet, and Sudan grass. As acidity decreased, the growth of the plants increased. Inverting the ordinary soil profile led to greater growth because, it is suggested, over-all moisture and nutrient conditions were more favorable for growth. The creosote and the Zn metarsenite **treatments** for preservation of fence poles were compared. Thorough butt **treatment** with creosote by the open-tank process protected pitch, red, and Scotch pine, and red maple against decay for 15 years; when creosote cannot be used throughout the length of the pole because of the effect of the fumes on tobacco plants, other preservatives should be used. A wood-gas generator was tested and found to be satisfactory. Irrigation with pure water, if more than one **treatment** was applied, reduced the quality and yield of tobacco; the addition of NaNO3 improved the grade and yield; the nitrate could be introduced as a concentrated solution into the water or added dry. Studies of the value of NH4NO3 are underway to determine its value for tobacco as a source of N. When considerable amts. of lime are added to the soil, B may also be required for maximum tobacco yield and quality. **Carotenoids** and xanthophylls were higher in light-shade tobacco. More green coloring matter was extracted from dark than lightshade tobacco. The Al content of com. tobacco tended to be greater in dark-colored grades than in light-colored grades. The N, Ca, and P content of com. tobacco showed no consistent relationship to com. grades. Chloropicrin is a good substitute for steaming in sterilizing seed beds. Fermate, Cuprocide, Arasan, Thiosan, Semesan, and concentrated HCHO dust was used against the fungus, Pythium debaryanum, causative agent of early damping-off of seedlings. CH2O was most effective but most difficult to apply; the other compns.

gave com. but not complete control. A new method of determining histidine in the mixture of amino acids which result from the hydrolysis of proteins was applied to a series of plants. The histidine is isolated as the salt of 3,4-dichlorobenzenesulfonic acid. Only about 70% of the protein of soybeans could be dissolved for investigations on globulin. A bountiful source of optically active isocitric acid was found in the leaves of the common greenhouse plant, Bryophyllum calycinum; large amts. were secured from the leaves of several species of Crassulaceae. Bones of rats fed a rachitogenic diet showed a relative low citric acid content, in contrast to animals that were fed either citrates or vitamin D to **prevent** or cure rickets. The citric acid content of chick tibiae varied with the vitamin D intake. Very small amts. of citric acid were found in the **liver**, spleen, and kidneys, and large amts. in the adrenals.

L14 ANSWER 60 OF 60 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1937:19106 CAPLUS
DOCUMENT NUMBER: 31:19106
ORIGINAL REFERENCE NO.: 31:2680f-i,2681a-i,2682a
TITLE: Studies in the chemotherapy of cancer
AUTHOR(S): Lustig, B.; Wachtel, H.
SOURCE: Bull. assoc. franc. etude cancer (1936), 25, 542-88
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB Studies in vivo and in vitro indicate that cancer may be combated chemotherapeutically by substances that either specifically attack the cancer cell or that alter the disturbed metabolic condition possibly responsible for the **disease.** Vitamin A seems the most promising **therapeutic** agent in the nonspecific group. In vitro, epithelioma cells specifically were lysed by theophylline, uric acid, acetic derivs. of guanidine, glycocyamine, creatine, estrone, saponin, quinidine, heptylhydrocupreine, decylhydrocupreine, formic acid and nicotinic acid. Sarcoma cells specifically were lysed by phenanthrene. Both epithelioma and sarcoma cells were lysed by taurocholic acid, quinine, propylhydrocupreine, crotonic acid, C18 monocarboxylic acids (in direct proportion to the number of unsatd. linkages) and thymonucleic acids. Both epithelioma and normal cells were lysed by styrylhydrocupreine. All cancer and normal cells were lysed nonspecifically by creatinine, adrenaline, papaverine, benzylhydrocupreine, isobutylhydrocupreine, fatty acids from C12 up, and oxalic acid. Cancer cells were protected against the cytolyzing action of normal serum by theobromine, deca- and dodecamethyleneguanidine, glycocyamine, arginine, vitamin D2, benzoic acid and derivs., camphoric acid, cyanuric acid, guanylic and nucleic acids from cancer of **liver**, glycine, leucine, cystine, cysteine, arginine, ornithine, glutamic acid, tryptophan, sarcosine and colamine. Sarcoma cells specifically were protected against the cytolyzing action of normal serum by indole compds. and furfural. Epithelioma cells specifically were protected against the cytolyzing action of normal serum by anterior pituitary extract, saponin, taurocholic acid, pyridine, piperidine, amygdalin, glycogen, oleic, stearic and acetic esters of cholesterol, maleic acid, mesaconic acid, itaconic acid and citraconic acid. The protective power of cancer serum against the cytolyzing action of normal serum on cancer cells was **inhibited** by quinidine and papaverine. The protective power of cancer serum against the cytolyzing action of normal serum on epithelioma cells was **inhibited** by posterior pituitary extract The protective power of maleic acid **inhibiting** the cytolyzing action of normal serum on cancer cells was decreased by adenosinephosphoric acid and adenylic acid, while this power of maleic acid with regard to epithelioma cells was decreased by prolan. The protective power of maleic acid and sarcomatous serum for epithelioma cells was abolished by vitamin A and **carotene**, which

themselves exerted no action in isolated epithelioma cells. Benzene, pyrrole, furan and thiophene reduced the protective power of maleic acid toward cancer cells without reducing the protective power of cancer serum. Compds. inert in vitro were: dextrin, dextrose, desoxycholic acid, cholic acid, cadaverine, putrescine, pyrrolidine, tyramine, xanthine, heteroxanthine, caffeine, parabanic acid, alloxan, urea, allantoin, guanidine, dimethylguanidine, vitamins B1 and B2, male sex hormone, insulin, thyroid exts., quinoline, isoquinoline, glycocholic acid, coagulene, hirudin, atropine, morphine, cyclohexene, cyclohexanone, pyrrolidine, cyclopentene, cyclopentanone, naphthalene, tetrahydronaphthalene, anthraquinone, pyrene, esculin, glucosamine, cholesterol, lecithin, C2-C5 fatty acids, low-mol. unsatd. acids except crotonic, fumaric acid and esters and aldehyde, citric acid and esters and aldehyde, maleic aldehyde, mesaconic aldehyde, itaconaldehyde, histamine, casein, protoalbumoses, deuteroalbumoses, methionine and oxyproline. In vivo the growth of exptl. tumor transplants was **prevented** completely by administration of parabanic acid, alloxan, urea, desoxycholic acid, quinine, propylhydrocupreine, isobutylhydrocupreine, heptylhydrocupreine, acrylic acid, crotonic acid, cyanuric acid, ornithine and lysine. Tumor growth was retarded and life prolonged by cadaverine, putrescine, pyrrolidine, tyramine, 7-methylhypoxanthine, 1,7-dimethylhypoxanthine, theophylline, decamethyleneguanidine, creatine, creatinine, vitamin A, decylhydrocupreine, lecithin, nucleic acid from cancer of **liver**, adenylic acid, adenosine phosphoric acid, arginine, cystine, proline, valine and leucine. Allantoin and cysteine retarded tumor growth but did not prolong life. Prolan, posterior pituitary extract (not pitocin or pitressin), benzyl- and styrylhydrocupreine, acetic acid and the indole compds. **inhibited** tumor growth; no statement was made regarding their effect on survival. Life was prolonged, but tumor growth not affected, by 7-methyladenine, 7-methylxanthine, theobromine, glycocyamine and **carotene**. Life was prolonged (effect on tumor growth not mentioned) by papaverine. Necrosis of grafted neoplasms was caused by cadaverine, tyramine, cholic acid, desoxycholic acid, glycocholic acid, taurocholic acid, benzylhydrocupreine, styrylhydrocupreine and glutamic acid. Thymonucleic acid caused tumor necrosis and prolonged life. Tumor growth was accelerated and life shortened by dimethylguanidine, dodecamethyleneguanidine, vitamin C, dextrin, dextrose, guanylic acid obtained from cancer of **liver**, and sarcosine. Tumor growth was accelerated without shortening of life by vitamin D2, esculin and amygdalin. Anterior pituitary extract acclerated tumor growth (survival not mentioned). Indole compds. protected sarcoma in vivo. Xanthine, saponin and phenyl-α-alanine, owing to their toxicity, shortened the life of the animal but did not affect tumor growth. Citric and oleic, but not arachidonic, acids also shortened life (effect on tumor not mentioned). Compds. inert in vivo were hypoxanthine, guanine, adenine, 9-methyladenine, paraxanthine, caffeine, uric acid, vitamins B2 and B2, male sex hormone, insulin, thyroid exts., adrenaline, estrone, glucosamine, ergosterol, Na formate, tetradecamethylenic acid, malic acid, metaldehyde, yeast nucleic acid, glycine, alanine, glycylglycine, asparagine, methionine, tyrosine, histidine and tryptophan. In **therapeutic** expts. in human skin epitheliomas, uric acid was inert and caffeine exerted a caustic action on the ulcerous surfaces **treated** without curing the tumor. Adenophosphoric acid in the form of "lacarnol" **prevented** the growth of an ulcerated melanosarcoma of the human foot and diminished metastases for 15 days, after which tumor growth was resumed.

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L15          94 FOURNIER S?/AU


MISMATCHED QUOTE 'O'MALLEY'
Quotation marks (or apostrophes) must be used in pairs,
one before and one after the expression you are setting
off or masking.

=> s "o'malley" s?/au
L16         142 "O'MALLEY" S?/AU

=> s watumull d?/au;s hix l?/au;s jackson h?/au;s nadolski g?/au
L17          14 WATUMULL D?/AU


L18          19 HIX L?/AU


L19        1118 JACKSON H?/AU


L20          16 NADOLSKI G?/AU

=> s l15 and l16 and l17 and l18 and l19 and l20
L21           0 L15 AND L16 AND L17 AND L18 AND L19 AND L20

=> fil medl,biosis,embase,caplus
COST IN U.S. DOLLARS                            SINCE FILE      TOTAL
                                                  ENTRY    SESSION
FULL ESTIMATED COST                              215.13     704.06

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)      SINCE FILE      TOTAL
                                                  ENTRY    SESSION
CA SUBSCRIBER PRICE                              -45.99     -45.99

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FILE 'CAPLUS' ENTERED AT 07:45:06 ON 24 JUN 2005
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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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=> s l15 and l16 and l17 and l18 and l19 and l20
L22           0 FILE MEDLINE
L23           0 FILE BIOSIS
L24           0 FILE EMBASE
L25           0 FILE CAPLUS

TOTAL FOR ALL FILES
L26           0 L15 AND L16 AND L17 AND L18 AND L19 AND L20

=> s (l15 or l16 or l17 or l18 or l19 or l20) and (?carotene? or ?carotenoid?)
L27           6 FILE MEDLINE
L28           5 FILE BIOSIS
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L29           6 FILE EMBASE
L30          21 FILE CAPLUS

TOTAL FOR ALL FILES
L31          38 (L15 OR L16 OR L17 OR L18 OR L19 OR L20) AND (?CAROTENE? OR
                ?CAROTENOID?)

=> s l31 not l14
PROXIMITY OPERATION NOT ALLOWED
Certain operators may not be nested in combination with other
operators.  A nested operator is valid only when it occurs at the same
level or above the operator outside the nested phrase as determined by
the following precedence list:

                    1.    Numeric
                    2.    (W), (NOTW), (A), (NOTA)
                    3.    (S), (NOTS)
                    4.    (P), (NOTP)
                    5.    (L), (NOTL)
                    6.    AND, NOT
                    7.    OR

For example, '(MONOCLONAL(W)ANTIBOD?)(L)ANTIGEN?' is valid since (W)
is above (L) on the precedence list.  However,
'((THIN(W)LAYER)(L)PHOSPHOLIPID#)(A)LACTONE#' is not valid since (L)
is below (A) on the precedence list.  The only exception is the 'OR'
operator.  This operator may be used in combination with any other
operator.  For example, '(ATOMIC OR NUCLEAR)(W)REACTOR' is valid.

=> dup rem l31
PROCESSING COMPLETED FOR L31
L32          21 DUP REM L31 (17 DUPLICATES REMOVED)

=> d 1-21 ibib abs

L32  ANSWER 1 OF 21  CAPLUS  COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER:        2005:453807  CAPLUS
DOCUMENT NUMBER:         142:482170
TITLE:                   Carotenoid analogs or derivatives for the
                         inhibition and amelioration of disease
INVENTOR(S):             Lockwood, Samuel Fournier; O'Malley, Sean;
                         Watumull, David G.; Hix, Laura M.;
                         Jackson, Henry; Nadolski, Geoff
PATENT ASSIGNEE(S):      USA
SOURCE:                  U.S. Pat. Appl. Publ., 136 pp., Cont.-in-part of U.S.
                         Ser. No. 629,538.
                         CODEN: USXXCO
DOCUMENT TYPE:           Patent
LANGUAGE:                English
FAMILY ACC. NUM. COUNT:  13
PATENT INFORMATION:

     PATENT NO.          KIND   DATE        APPLICATION NO.          DATE
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     US 2005113372        A1    20050526    US 2004-793670           20040304
     US 2004162329        A1    20040819    US 2003-629538           20030729
     US 2005037995        A1    20050217    US 2004-793703           20040304
     US 2005065097        A1    20050324    US 2004-793696           20040304
     US 2005075337        A1    20050407    US 2004-793702           20040304
PRIORITY APPLN. INFO.:                      US 2002-399194P      P   20020729

Prepared by: Mary Hale @2-2507 Rem Bldg 1D86
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US 2003-467973P	P	20030505
US 2003-472831P	P	20030522
US 2003-473741P	P	20030528
US 2003-485304P	P	20030703
US 2003-629538	A2	20030729

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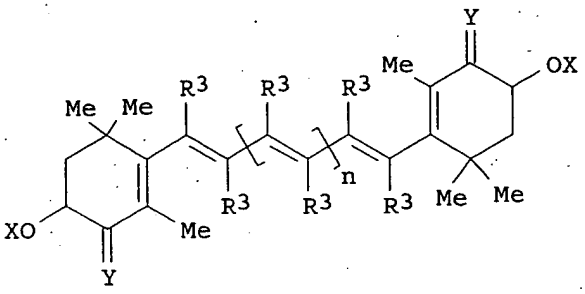

I

AB The preparation and evaluation of **carotenoid** derivs. I (R1, R2 = independently an acyclic alkene comprising at least one substituent, or a cyclic ring comprising at least one substituent; R3 = independently H or Me; n = 5-12) as antioxidants for the treatment of related disease is described. Thus, astaxanthin in CH2Cl2 was treated with DIPEA and succinic anhydride to yield the disuccinic ester.

L32 ANSWER 2 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:371018 CAPLUS
DOCUMENT NUMBER: 142:411509
TITLE: Preparation of **carotenoid** ester analogs or derivatives for the inhibition and amelioration of liver disease
INVENTOR(S): Lockwood, Samuel Fournier; **O'Malley, Sean**; **Watumull, David G.**; **Hix, Laura M.**; **Jackson, Henry**; **Nadolski, Geoff**
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 139 pp., Cont.-in-part of U.S. Ser. No. 629,538.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005090469	A1	20050428	US 2004-793660	20040304
US 2004162329	A1	20040819	US 2003-629538	20030729
US 2005037995	A1	20050217	US 2004-793703	20040304
US 2005065097	A1	20050324	US 2004-793696	20040304
US 2005075337	A1	20050407	US 2004-793702	20040304

PRIORITY APPLN. INFO.:

US 2002-399194P	P	20020729
US 2003-467973P	P	20030505
US 2003-472831P	P	20030522
US 2003-473741P	P	20030528
US 2003-485304P	P	20030703
US 2003-629538	A2	20030729

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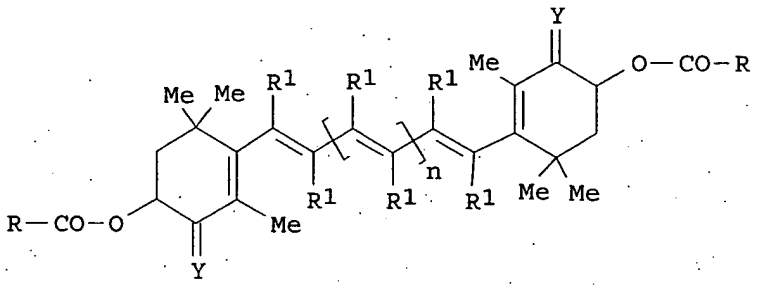

I

AB A method of treating liver disease in a subject comprising administering to the subject an effective amount of a pharmaceutically acceptable formulation of a synthetic analog or derivative of a **carotenoid.** **Carotenoid** esters of formula I [R = (substituted) OH, (substituted) alkylamino, amino acid, alkyl, etc.; each R1 = H, Me; n = 5-12] are prepared The subject may be administered a **carotenoid** analog or derivative, either alone or in combination with another **carotenoid** analog or derivative, or co-antioxidant formulation. Thus, astaxanthin disuccinate was prepared from astaxanthin and succinic anhydride. The prepared compds. were tested for inhibition of disease and pharmacokinetics.

L32 ANSWER 3 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:303393 CAPLUS
DOCUMENT NUMBER: 142:373996
TITLE: Pharmaceutical compositions including **carotenoid** ester analogs or derivatives for the inhibition and amelioration of disease
INVENTOR(S): Lockwood, Samuel Fournier; **O'Malley, Sean; Watumull, David G.; Hix, Laura M.; Jackson, Henry; Nadolski, Geoff**
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 131 pp., Cont.-in-part of U.S. Ser. No. 629,538.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2005075316	A1	20050407	US 2004-793692		20040304
US 2004162329	A1	20040819	US 2003-629538		20030729
US 2005037995	A1	20050217	US 2004-793703		20040304
US 2005065097	A1	20050324	US 2004-793696		20040304
US 2005075337	A1	20050407	US 2004-793702		20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P	20020729
			US 2003-467973P	P	20030505
			US 2003-472831P	P	20030522
			US 2003-473741P	P	20030528
			US 2003-485304P	P	20030703
			US 2003-629538	A2	20030729

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB A method for inhibiting and/or ameliorating the occurrence of diseases associated with reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals in a subject whereby a subject is administered a **carotenoid** analog or derivative, e.g., I [X1 = (CR3:CR3)z-(E); z = 5 - 12; R3 = H, Me; Y = O, H2; R = OR1, R1; R1 = alkyl-+N(R2)3, aryl-+N(R2)3, alkyl-CO2-, (un)phosphorylated N-protonated amino acid, polyethylene glycol, dextran, H, alkyl, aryl; R2 = H, alkyl, aryl], either alone or in combination with another **carotenoid** analog or derivative, or co-antioxidant formulation. The analog or derivative is administered such that the subject's risk of experiencing diseases associated with reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals may be thereby reduced. The analog or analog combination may be administered to a subject for the inhibition and/or amelioration of any disease that involves production of reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals. In some embodiments, the invention may include a pharmaceutical composition including a **carotenoid** analog or derivative The **carotenoid** analog may include a conjugated polyene with between 7 to 14 double bonds. The conjugated polyene may include a cyclic ring including at least one substituent. In some embodiments, a cyclic ring of a **carotenoid** analog or derivative may include at least one substituent. The substituent may be coupled to the cyclic ring with an ester functionality. In some embodiments, a pharmaceutical composition may include a biol. inactive carrier. The pharmaceutical composition may be adapted to be administered to a human subject. Thus, (±)-Astaxanthin disuccinate disodium salt, was prepared, separated into pure stereoisomers, e.g., meso isomer [II; X2 = CMe:CHCH:CHCMe:CHCH:CHCH:CMeCH:CHCH:CMe-(E)-all], and tested for: water solubility, radical cation formation, induction of connexin 43 protein expression, induction of intercellular gap junctional communication, direct superoxide anion scavenging as determined by EPR and bioavailability following oral administration.

L32 ANSWER 4 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:259647 CAPLUS
DOCUMENT NUMBER: 142:316980
TITLE: Pharmaceutical compositions including **carotenoid** ether analogs or derivatives for the inhibition and amelioration of disease
INVENTOR(S): Lockwood, Samuel Fournier; **O'Malley, Sean**; **Watumull, David G.**; **Hix, Laura M.**; **Jackson, Henry**; **Nadolski, Geoff**
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 126 pp., Cont.-in-part of U.S. Ser. No. 629,538.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005065096	A1	20050324	US 2004-793680	20040304

US 2004162329	A1	20040819	US 2003-629538		20030729
US 2005037995	A1	20050217	US 2004-793703		20040304
US 2005065097	A1	20050324	US 2004-793696		20040304
US 2005075337	A1	20050407	US 2004-793702		20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P	20020729
			US 2003-467973P	P	20030505
			US 2003-472831P	P	20030522
			US 2003-473741P	P	20030528
			US 2003-485304P	P	20030703
			US 2003-629538	A2	20030729

OTHER SOURCE(S): MARPAT 142:316980

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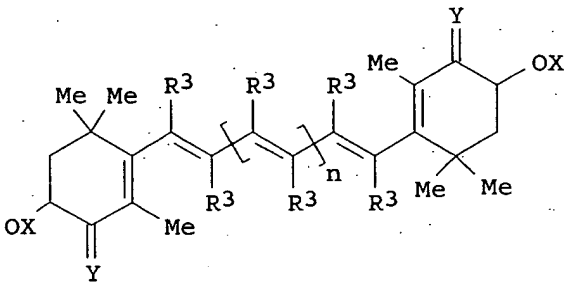


I

AB **Carotenoid** analogs, I, (n = 5-12; R3 = H or Me; Y = O or H2; X = phosphate, sulfate sugar, amine, alkyl, aryl, acid, etc.) for inhibiting and/or ameliorating the occurrence of diseases associated with reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals in a subject whereby a subject is administered a **carotenoid** analog or derivative, either alone or in combination with another **carotenoid** analog or derivative, or co-antioxidant formulation are prepared and evaluated. Thus, astaxanthin in dichloromethane was treated with DIPEA, and succinic anhydride to yield the corresponding disuccinic acid ester. The analog or derivative is administered such that the subject's risk of experiencing diseases associated with reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals may be thereby reduced. The analog or analog combination may be administered to a subject for the inhibition and/or amelioration of any disease that involves production of reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals. In some embodiments, the invention may include a pharmaceutical composition including a **carotenoid** analog or derivative In some embodiments, a pharmaceutical composition may include a biol. inactive carrier. The pharmaceutical composition may be adapted to be administered to a human subject.

L32 ANSWER 5 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER:	2005:238691 CAPLUS
DOCUMENT NUMBER:	142:291360
TITLE:	**Carotenoid** analogs or derivatives for controlling c-reactive protein levels
INVENTOR(S):	Lockwood, Samuel Fournier; **O'Malley, Sean**; **Watumull, David G.**; **Hix, Laura M.**; **Jackson, Henry**; **Nadolski, Geoff**
PATENT ASSIGNEE(S):	USA
SOURCE:	U.S. Pat. Appl. Publ., 138 pp., Cont.-in-part of U.S. Ser. No. 629,538. CODEN: USXXCO

Prepared by: Mary Hale @2-2507 Rem Bldg 1D86

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2005059659	A1	20050317	US 2004-793685		20040304
US 2004162329	A1	20040819	US 2003-629538		20030729
US 2005037995	A1	20050217	US 2004-793703		20040304
US 2005065097	A1	20050324	US 2004-793696		20040304
US 2005075337	A1	20050407	US 2004-793702		20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P	20020729
			US 2003-467973P	P	20030505
			US 2003-472831P	P	20030522
			US 2003-473741P	P	20030528
			US 2003-485304P	P	20030703
			US 2003-629538	A2	20030729

OTHER SOURCE(S): MARPAT 142:291360

AB A method of controlling (e.g., influencing or affecting) C-reactive protein levels in a subject may include administering to the subject an effective amount of a pharmaceutically acceptable formulation. The pharmaceutically acceptable formulation may include a synthetic analog or derivative of a **carotenoid.** The subject may be administered a **carotenoid** analog or derivative, either alone or in combination with another **carotenoid** analog or derivative, or co-antioxidant formulation. The **carotenoid** analog may include a conjugated polyene with between 7 to 14 double bonds. The conjugated polyene may include an acyclic alkene including at least one substituent and/or a cyclic ring including at least one substituent. In some embodiments, a **carotenoid** analog or derivative may include at least one substituent.

L32 ANSWER 6 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:238683 CAPLUS
DOCUMENT NUMBER: 142:291448
TITLE: **Carotenoid** ester analogs or derivatives for controlling c-reactive protein levels
INVENTOR(S): Lockwood, Samuel Fournier; **O'Malley, Sean; Watumull, David G.; Hix, Laura M.; Jackson, Henry; Nadolski, Geoff**
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 134 pp., Cont.-in-part of U.S. Ser. No. 629,538.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2005059635	A1	20050317	US 2004-793691		20040304
US 2004162329	A1	20040819	US 2003-629538		20030729
US 2005037995	A1	20050217	US 2004-793703		20040304
US 2005065097	A1	20050324	US 2004-793696		20040304
US 2005075337	A1	20050407	US 2004-793702		20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P	20020729
			US 2003-467973P	P	20030505
			US 2003-472831P	P	20030522
			US 2003-473741P	P	20030528

	US 2003-485304P	P 20030703
	US 2003-629538	A2 20030729

OTHER SOURCE(S): MARPAT 142:291448

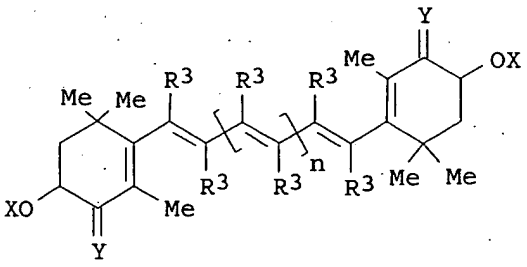
AB A method of controlling (e.g., influencing or affecting) C-reactive protein levels in a subject may include administering to the subject an effective amount of a pharmaceutically acceptable formulation. The pharmaceutically acceptable formulation may include a synthetic analog or derivative of a **carotenoid.** The subject may be administered a **carotenoid** analog or derivative, either alone or in combination with another **carotenoid** analog or derivative, or co-antioxidant formulation. The **carotenoid** analog may include a conjugated polyene with between 7 to 14 double bonds. The conjugated polyene may include a cyclic ring including at least one substituent. In some embodiments, a cyclic ring of a **carotenoid** analog or derivative may include at least one substituent. The substituent may be coupled to the cyclic ring with an ester functionality.

L32 ANSWER 7 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:185383 CAPLUS
DOCUMENT NUMBER: 142:261669
TITLE: **Carotenoid** ether analogs or derivatives for controlling c-reactive protein levels
INVENTOR(S): Lockwood, Samuel Fournier; **O'Malley, Sean; Watumull, David G.; Hix, Laura M.; Jackson, Henry; Nadolski, Geoff**
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 126 pp., Cont.-in-part of U.S. Ser. No. 629,538.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005049248	A1	20050303	US 2004-793676	20040304
US 2004162329	A1	20040819	US 2003-629538	20030729
US 2005037995	A1	20050217	US 2004-793703	20040304
US 2005065097	A1	20050324	US 2004-793696	20040304
US 2005075337	A1	20050407	US 2004-793702	20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P 20020729
			US 2003-467973P	P 20030505
			US 2003-472831P	P 20030522
			US 2003-473741P	P 20030528
			US 2003-485304P	P 20030703
			US 2003-629538	A2 20030729

OTHER SOURCE(S): MARPAT 142:261669
GI



I

AB The preparation and evaluation of **carotenoid** derivs. I (X = phosphate, sulfate, sugar, amine, amino acid, polyethylene glycol, aryl, etc.; R3 = independently H or Me; Y = O, H2; n = 5-12) for controlling C-reactive protein levels is described. Thus, astaxanthin is treated with succinic anhydride and DIPEA in CH2Cl2 to give the corresponding disuccinic ester. The subject may be administered a **carotenoid** analog or derivative, either alone or in combination with another **carotenoid** analog or derivative, or co-antioxidant formulation.

L32 ANSWER 8 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:99144 CAPLUS
DOCUMENT NUMBER: 142:198233
TITLE: Preparation of **carotenoid** ether analogs or derivatives for the inhibition and amelioration of liver disease
INVENTOR(S): Lockwood, Samuel Fournier; **O'Malley, Sean**; **Watumull, David G.**; **Hix, Laura M.**; **Jackson, Henry**; **Nadolski, Geoff**
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 130 pp., Cont.-in-part of U.S. Ser. No. 629,538.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2005026874	A1	20050203	US 2004-793681		20040304
US 2004162329	A1	20040819	US 2003-629538		20030729
US 2005037995	A1	20050217	US 2004-793703		20040304
US 2005065097	A1	20050324	US 2004-793696		20040304
US 2005075337	A1	20050407	US 2004-793702		20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P	20020729
			US 2003-467973P	P	20030505
			US 2003-472831P	P	20030522
			US 2003-473741P	P	20030528
			US 2003-485304P	P	20030703
			US 2003-629538	A2	20030729

OTHER SOURCE(S): MARPAT 142:198233
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB A method of treating liver disease in a subject. The method may include administering to the subject an effective amount of a pharmaceutically acceptable formulation. The pharmaceutically acceptable formulation may include a synthetic analog or derivative I [Z = {CR3:CR3-(E)}z; z = 5 - 12; R3 = H, Me; Y = O, H2; X = P(:O)(OR1)2, S(:O)(OR1)2, X', alkyl-N+(R2)3, aryl-N+(R2)3, alkyl-CO2-, aryl-CO2-, N-protonated amino acid, phosphorylated N-protonated amino acid, polyethylene glycol, dextran, vitamin C, phosphorylated vitamin C, aryl; R1 = alkyl-N+(R2)3, aryl-N+(R2)3, alkyl-CO2-, aryl-CO2-, N-protonated amino acid, phosphorylated N-protonated amino acid, polyethylene glycol, dextran, H, alkyl, aryl, alkali salt; R2 = H, alkyl, aryl; (wherein X enhances the solubility of I allowing at least partial water solubility)] of a **carotenoid**. The subject may be administered a **carotenoid** analog or derivative, either alone or in combination with another **carotenoid** analog or derivative, or co-antioxidant formulation. The **carotenoid** analog may include a conjugated polyene with between 7 to 14 double bonds. The conjugated polyene may include a cyclic ring including at least one substituent. In some embodiments, a cyclic ring of a **carotenoid** analog or derivative may include at least one substituent. The substituent may be coupled to the cyclic ring with an ether functionality. Thus, astaxanthin disuccinate ascorbate diester was prepared from astaxanthin via acylation with succinic anhydride in CH2Cl2 containing EtNH(CHMe2)2 and catalytic DMAP followed by reaction with 2-O-(tert-butyldimethylsilyl)ascorbic acid in CH2Cl2 containing DMAP and EDCI·HCl. Astaxanthin disuccinate disodium salt was tested for its water solubility, ability to induce Connexin 43 protein expression, induce intercellular gap junction communication, inhibition of carcinogen-induced neoplastic transformation, reduce superoxides in neutrophils, and its plasma pharmacokinetics.

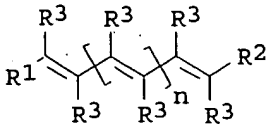
L32 ANSWER 9 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:34616 CAPLUS
DOCUMENT NUMBER: 142:114303
TITLE: **Carotenoid** ester analogs or derivatives for controlling connexin 43 expression
INVENTOR(S): Lockwood, Samuel Fournier; **O'Malley, Sean; Watumull, David G.; Hix, Laura M.; Jackson, Henry; Nadolski, Geoff**
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 135 pp., Cont.-in-part of U.S. Ser. No. 629,538.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2005009930	A1	20050113	US 2004-793686		20040304
US 2004162329	A1	20040819	US 2003-629538		20030729
US 2005037995	A1	20050217	US 2004-793703		20040304
US 2005065097	A1	20050324	US 2004-793696		20040304
US 2005075337	A1	20050407	US 2004-793702		20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P	20020729
			US 2003-467973P	P	20030505
			US 2003-472831P	P	20030522
			US 2003-473741P	P	20030528

	US 2003-485304P	P 20030703
	US 2003-629538	A2 20030729

OTHER SOURCE(S): MARPAT 142:114303
GI



I

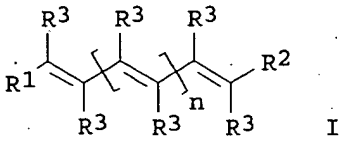
AB The preparation and evaluation of **carotenoid** derivs. I (R1, R2 = independently an acyclic alkene comprising at least one substituent, or a cyclic ring comprising at least one substituent; R3 = independently H or Me; n = 5-12) as inhibitors of connexin 43 expression for the treatment of cardiac arrhythmia and cancers. Thus, astaxanthin in CH2Cl2 was treated with DIPEA and succinic andhydride to yield the corresponding disuccinic ester.

L32 ANSWER 10 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:34594 CAPLUS
DOCUMENT NUMBER: 142:114302
TITLE: **Carotenoid** ester analogs or derivatives for controlling connexin 43 expression
INVENTOR(S): Lockwood, Samuel Fournier; **O'Malley, Sean**; **Watumull, David G.**; **Hix, Laura M.**; **Jackson, Henry**; **Nadolski, Geoff**
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 133 pp., Cont.-in-part of U.S. Ser. No. 629,538.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005009788	A1	20050113	US 2004-793697	20040304
US 2004162329	A1	20040819	US 2003-629538	20030729
US 2005037995	A1	20050217	US 2004-793703	20040304
US 2005065097	A1	20050324	US 2004-793696	20040304
US 2005075337	A1	20050407	US 2004-793702	20040304

PRIORITY APPLN. INFO.:	US 2002-399194P	P 20020729
	US 2003-467973P	P 20030505
	US 2003-472831P	P 20030522
	US 2003-473741P	P 20030528
	US 2003-485304P	P 20030703
	US 2003-629538	A2 20030729

OTHER SOURCE(S): MARPAT 142:114302
GI



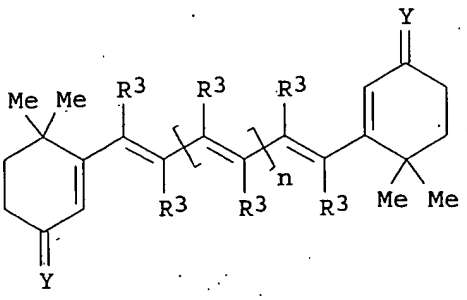
I

AB The preparation and evaluation of **carotenoid** derivs. I (R1, R2 = independently an acyclic alkene comprising at least one substituent, or a cyclic ring comprising at least one substituent; R3 = independently H or Me; n = 5-12) as inhibitors of connexin 43 expression for the treatment of cardiac arrhythmia and cancers. Thus, astaxanthin in CH2Cl2 was treated with DIPEA and succinic andhydride to yield the corresponding disuccinic ester.

L32 ANSWER 11 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:34587 CAPLUS
DOCUMENT NUMBER: 142:114301
TITLE: **Carotenoid** ether analogs or derivatives for the inhibition and amelioration of diseases associated with reactive radical species
INVENTOR(S): Lockwood, Samuel Fournier; **O'Malley, Sean**; **Watumull, David G.**; **Hix, Laura M.**; **Jackson, Henry**; **Nadolski, Geoff**
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 125 pp., Cont.-in-part of U.S. Ser. No. 629,538.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2005009758	A1	20050113	US 2004-793671		20040304
US 2004162329	A1	20040819	US 2003-629538		20030729
US 2005037995	A1	20050217	US 2004-793703		20040304
US 2005065097	A1	20050324	US 2004-793696		20040304
US 2005075337	A1	20050407	US 2004-793702		20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P	20020729
			US 2003-467973P	P	20030505
			US 2003-472831P	P	20030522
			US 2003-473741P	P	20030528
			US 2003-485304P	P	20030703
			US 2003-629538	A2	20030729

OTHER SOURCE(S): MARPAT 142:114301
GI



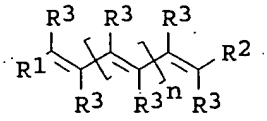
I

AB A method for inhibiting and/or ameliorating the occurrence of diseases associated with reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals in a subject whereby a subject is administered a **carotenoid** analog or derivative of structure I (n = 5-12; R3 = H or Me; Y = O or H2, X = phosphate, sulfate, sugar, amine alkyl, acid, etc.) either alone or in combination with another **carotenoid** analog or derivative, or co-antioxidant formulation. Thus, astaxanthin is treated with succinic anhydride and DIPEA to yield the corresponding disuccinic acid ester. The analog or derivative is administered such that the subject's risk of experiencing diseases associated with reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals may be thereby reduced. The analog or analog combination may be administered to a subject for the inhibition and/or amelioration of any disease that involves production of reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals.

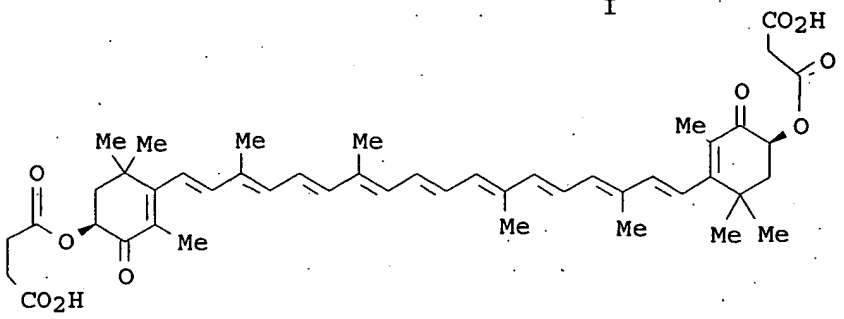
L32 ANSWER 12 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:17025 CAPLUS
DOCUMENT NUMBER: 142:94006
TITLE: **Carotenoid** analogs or derivatives for the inhibition and amelioration of liver disease
INVENTOR(S): Lockwood, Samuel Fournier; **O'Malley, Sean**; **Watumull, David G.**; **Hix, Laura M.**; **Jackson, Henry**; **Nadolski, Geoff**
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 140 pp., Cont.-in-part of U.S. Ser. No. 629,538.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2005004235	A1	20050106	US 2004-793675		20040304
US 2004162329	A1	20040819	US 2003-629538		20030729
US 2005037995	A1	20050217	US 2004-793703		20040304
US 2005065097	A1	20050324	US 2004-793696		20040304
US 2005075337	A1	20050407	US 2004-793702		20040304
PRIORITY APPLN. INFO.:			US 2002-399194P	P	20020729
			US 2003-467973P	P	20030505
			US 2003-472831P	P	20030522
			US 2003-473741P	P	20030528
			US 2003-485304P	P	20030703
			US 2003-629538	A2	20030729

OTHER SOURCE(S): MARPAT 142:94006
GI



I



II

AB The preparation and evaluation of **carotenoid** derivs. I (R1, R2 = independently an acyclic alkene comprising at least one substituent, or a cyclic ring comprising at least one substituent; R3 = independently H or Me; n = 5-12) as antioxidants for the treatment of liver disease is described. Thus, astaxanthin in CH2Cl2 was treated with DIPEA and succinic andhydride to yield II.

L32 ANSWER 13 OF 21 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2005278636 IN-PROCESS
DOCUMENT NUMBER: PubMed ID: 15921976
TITLE: Hydrophilic **carotenoids**: surface properties and aqueous aggregation of a rigid, long-chain, highly unsaturated dianionic bolaamphiphile with a **carotenoid** spacer.
AUTHOR: Foss Bente Jeanette; Sliwka Hans-Richard; Partali Vassilia; Naess Stine Nalum; Elgsaeter Arnljot; Melo Thor Bernt; Naqvi K Razi; **O'malley Sean**; Lockwood Samuel F
CORPORATE SOURCE: Department of Chemistry, Norwegian University of Science and Technology (NTNU), N-7491 Trondheim, Norway.
SOURCE: Chemistry and physics of lipids, (2005 Jun) 135 (2) 157-67. Electronic Publication: 2005-03-13.
Journal code: 0067206. ISSN: 0009-3084.
PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals
ENTRY DATE: Entered STN: 20050601
Last Updated on STN: 20050601

AB The water dispersibility of astaxanthin was greatly enhanced by converting it to a disodium disuccinate salt. This **carotenoid** salt behaved as a bolaamphiphile in water; dynamic light scattering (DLS) revealed the formation of stable aggregates with an average hydrodynamic radius close to 1mum. Larger aggregates were observed in solutions of increased osmolarity. Absorption spectra demonstrated that the aggregates could withstand the addition of 20% acetonitrile before disintegrating to monomers. The physicochemical properties of this astaxanthin derivative in solution were comprehensively studied by measuring surface tension,

critical aggregate concentration, surface concentration, molecule area, free energy of adsorption and micellation, adsorption-aggregate energy relationship, and equilibrium constants, and then compared with similar compounds reported previously in the literature.

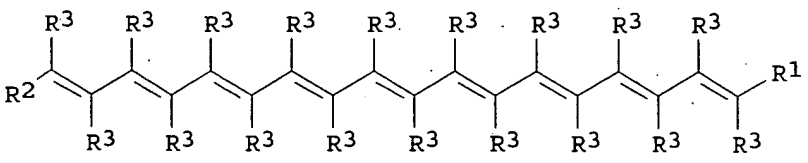
L32 ANSWER 14 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:101126 CAPLUS
DOCUMENT NUMBER: 140:164047
TITLE: Structural **carotenoid** analogs for the inhibition and amelioration of disease
INVENTOR(S): Lockwood, Samuel Fournier; **O'Malley, Sean**; **Watumull, David G.**; **Hix, Laura M.**; **Jackson, Henry**; **Nadolski, Geoff**
PATENT ASSIGNEE(S): Hawaii Biotech, Inc., USA
SOURCE: PCT Int. Appl., 278 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004011423	A2	20040205	WO 2003-US23706	20030729
WO 2004011423	A3	20040506		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2495167	AA	20040205	CA 2003-2495167	20030729
EP 1532108	A2	20050525	EP 2003-772051	20030729
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				

PRIORITY APPLN. INFO.:

US 2002-399194P	P	20020729
US 2003-467973P	P	20030505
US 2003-472831P	P	20030522
US 2003-473741P	P	20030528
US 2003-485304P	P	20030703
WO 2003-US23706	W	20030729

OTHER SOURCE(S): CASREACT 140:164047; MARPAT 140:164047
GI



I

AB A method for inhibiting and/or ameliorating the occurrence of diseases associated with reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals in a subject whereby a subject is administered a **carotenoid** structural analog I [R1, R2 = substituted acyclic alkene, ZW; R3 = H, Me; Z = unsatd. C4-10-cycloalkyl; W = XR, amino acid, ester, carbamate, amine, amide, carbonate, alc., phosphate, sulfonate, amine, sugar, glycoside, succinate, glycinate, carboxylate salt; X = O, S, N], either alone or in combination with another **carotenoid** analog, or co-antioxidant formulation. The analog or analog combination is administered such that the subject's risk of experiencing diseases associated with reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals may be thereby reduced. The analog or analog combination may be administered to a subject for the inhibition and/or amelioration of ischemia-reperfusion injury. The analog or analog combination may be administered to a subject for the inhibition and/or amelioration of liver disease. The analog or analog combination may be administered to a subject for the inhibition and/or amelioration of cancer. The analog or analog combination may be administered to a subject for the inhibition and/or amelioration of cardiac arrhythmia and/or sudden cardiac death. The analog or analog combination may be administered to a subject for the inhibition and/or amelioration of any disease that involves production of reactive oxygen species, reactive nitrogen species, radicals and/or non-radicals. In one embodiment, a water-soluble and/or water-dispersible astaxanthin analog is particularly effective. This invention further includes pharmaceutical compns. comprising structural **carotenoid** analogs either alone or in combination.

L32 ANSWER 15 OF 21 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2004485563 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15454227
TITLE: In vitro plasma protein binding and aqueous aggregation behavior of astaxanthin dilysinate tetrahydrochloride.
AUTHOR: Zsila Ferenc; Fitos Ilona; Bikadi Zsolt; Simonyi Miklos; **Jackson Henry L**; Lockwood Samuel F
CORPORATE SOURCE: Institute of Biomolecular Chemistry, Chemical Research Center, Budapest, PO Box 17, H-1525, Hungary.
SOURCE: Bioorganic & medicinal chemistry letters, (2004 Nov 1) 14 (21) 5357-66.
Journal code: 9107377. ISSN: 0960-894X.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200505
ENTRY DATE: Entered STN: 20040930
Last Updated on STN: 20050506
Entered Medline: 20050505

AB The tetrahydrochloride salt of astaxanthin di-L-lysinate (lys(2)AST) is a highly water-dispersible astaxanthin-amino acid conjugate, with an aqueous dispersibility of > or = 181.6 mg/mL. The statistical mixture of stereoisomers has been well characterized as an aqueous-phase superoxide anion scavenger, effective at micromolar (microM) concentrations. In the current study, the aqueous aggregation behavior and in vitro plasma protein binding [with fatty-acid-free human serum albumin (HSA) and alpha(1)-acid glycoprotein (AGP)] were investigated with a suite of techniques, including circular dichroism (CD) and UV-vis spectroscopy, ultrafiltration, competitive ligand displacement, and fluorescence quenching. Induced CD bands obtained in Ringer buffer solution of HSA demonstrated high affinity monomeric binding of the compound at low ligand

per protein (L/P) ratios (in aqueous solution alone the **carotenoid** molecules formed card-pack aggregates). The binding constant (approximately 10(6)M(-1)) and the binding stoichiometry (approximately 0.2 per albumin molecule) were calculated from CD titration data. CD displacement and ultrafiltration experiments performed with marker ligands of HSA indicated that the ligand binding occurred at a site distinct from the main drug binding sites of HSA (i.e., Sites I and II). At intermediate L/P ratios, both monomeric and aggregated ("chirally complexed") binding occurred simultaneously at distinct sites of the protein. At high L/P ratios, chiral complexation predominantly occurred on the asymmetric protein template. The tentative location of the chirally-complexed aggregation on the HSA template was identified as the large interdomain cleft of HSA, where **carotenoid** derivatives have been found to bind previously. Only weak binding to AGP was observed. These results suggest that parenteral use of this highly potent, water-dispersible astaxanthin-amino acid conjugate will result in plasma protein association, and plasma protein binding at sites unlikely to displace fatty acids and drugs bound at well-characterized binding sites on the albumin molecule.

L32 ANSWER 16 OF 21 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 2004323722 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15225712
TITLE: Synthesis, characterization, and direct aqueous superoxide anion scavenging of a highly water-dispersible astaxanthin-amino acid conjugate.
AUTHOR: **Jackson Henry L**; Cardounel Arturo J; Zweier Jay L; Lockwood Samuel F
CORPORATE SOURCE: Hawaii Biotech, Inc., 99-193 Aiea Heights Drive, Suite 200, Aiea, HI 96701, USA.
SOURCE: Bioorganic & medicinal chemistry letters, (2004 Aug 2) 14 (15) 3985-91.
Journal code: 9107377. ISSN: 0960-894X.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200504
ENTRY DATE: Entered STN: 20040701
Last Updated on STN: 20050413
Entered Medline: 20050412

AB The aqueous solubility and/or dispersibility of synthetic **carotenoid** analogs can be improved by varying the chemical structure(s) of the esterified moieties. In the current study, a highly water-dispersible astaxanthin (3,3'-dihydroxy-beta,beta-**carotene** -4,4'-dione) derivative was synthesized by esterification to the amino acid L-lysine, and subsequently converted to the tetrahydrochloride salt. Deep violet, evenly colored aqueous suspensions were obtained with addition of the novel derivative to USP purified water up to a maximum of 181.6 mg/mL. These aqueous suspensions were obtained without the addition of heat, detergents, co-solvents, or other additives. At higher concentrations (above 181.6 mg/mL), the dispersion became turbid and viscous. There was no saturation point up to 181.6 mg/mL. The direct superoxide scavenging ability of the tetrahydrochloride dilysine astaxanthin salt was also evaluated by electron paramagnetic resonance (EPR) spectroscopy in a well-characterized in vitro isolated human neutrophil assay. The novel derivative was an extremely potent (micromolar concentration) aqueous-phase scavenger, with near-complete suppression of the superoxide anion signal (as detected by spin-trap adducts of DEPMPO) achieved at 100 microM. To the authors' knowledge,

this novel **carotenoid** derivative exhibits the greatest aqueous dispersibility yet described for a natural and/or synthetic C40 **carotenoid**, and as such, will find utility in those applications for which aqueous-phase singlet oxygen quenching and direct radical scavenging are required.

L32 ANSWER 17 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:646221 CAPLUS
DOCUMENT NUMBER: 141:332336
TITLE: The Efficient Synthesis of Disodium Disuccinate Astaxanthin (Cardax)
AUTHOR(S): Frey, Dean A.; Kataisto, Erik W.; Ekmanis, Juris L.; **O'Malley, Sean**; Lockwood, Samuel F.
CORPORATE SOURCE: Chemical Development and Analytical Quality Services, Albany Molecular Research Inc., Albany, NY, 12212, USA
SOURCE: Organic Process Research & Development (2004), 8(5), 796-801
CODEN: OPRDFK; ISSN: 1083-6160
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A practical procedure is described for the multigram preparation of disodium disuccinate derivs. of synthetic astaxanthin (Cardax) [from all-trans-(all-E)-3S,3'S-, meso-(3R,3'S)-, and 3R,3'R-dihydroxy-β,β- **carotene**-4,4'-dione in a 1p2:1 statistical mixture of stereoisomers, as well as from the individual component stereoisomers]. Process development eliminated chromatog. sepns., controlled geometric isomerization, and improved the overall yield of the two-step process, with significant improvements in both the yield and purity of Cardax. Bulk chromatog. separation of the diastereomeric dicamphanic acid ester of synthetic astaxanthin was performed by modifications of the published procedure to subsequently generate multigram quantities of each stereoisomer of disodium disuccinate of astaxanthin.
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L32 ANSWER 18 OF 21 MEDLINE on STN DUPLICATE 4
ACCESSION NUMBER: 2004510987 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15479561
TITLE: Bioactive **carotenoids**: potent antioxidants and regulators of gene expression.
AUTHOR: **Hix Laura M**; Lockwood Samuel F; Bertram John S
CORPORATE SOURCE: Department of Cell and Molecular Biology and Cancer Research Center of Hawaii, University of Hawaii at Manoa, 1236 Laulala Street, Honolulu, HI 96813, USA.
SOURCE: Redox report : communications in free radical research, (2004) 9 (4) 181-91. Ref: 58
Journal code: 9511366. ISSN: 1351-0002.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200503
ENTRY DATE: Entered STN: 20041014
Last Updated on STN: 20050308
Entered Medline: 20050307
AB **Carotenoids** are plant pigments, some of which act as a vital source of vitamin A to all animals, that appear to have additional

benefits to primates. They are potent antioxidants and photoprotectants and can additionally modulate gene activity resulting in protection from experimentally-induced inflammatory damage and neoplastic transformation. Anti-neoplastic properties appear tightly correlated to their ability to induce the gap junctional protein connexin 43 (Cx43). This when upregulated leads to decreased proliferation and decreased indices of neoplasia in animal and human cells. Delivery of natural **carotenoids** can be compromised by poor bioavailability. To overcome this, a synthetic water-dispersible derivative of astaxanthin has been synthesized and shown to be: highly bioavailable; a potent antioxidant; protective against experimental ischemia-reperfusion injury and capable of inducing Cx43, suggesting antineoplastic potential. The ability to deliver biologically active **carotenoids** at high concentration and with good reproducibility appears to have been achieved.

L32 ANSWER 19 OF 21 MEDLINE on STN DUPLICATE 5
ACCESSION NUMBER: 2004292591 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15194214
TITLE: Upregulation of connexin 43 protein expression and increased gap junctional communication by water soluble disodium disuccinate astaxanthin derivatives.
AUTHOR: **Hix Laura M**; Lockwood Samuel F; Bertram John S
CORPORATE SOURCE: Department of Cell and Molecular Biology, University of Hawaii at Manoa, Honolulu 96822, USA.
SOURCE: Cancer letters, (2004 Jul 28) 211 (1) 25-37. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200408
ENTRY DATE: Entered STN: 20040615
Last Updated on STN: 20040806
Entered Medline: 20040805

AB **Carotenoids** are plant pigments whose consumption is associated with lower cancer rates in humans. Studies in experimental animal and cell systems have confirmed the cancer chemopreventive activity of these compounds. However, their extremely hydrophobic nature makes these compounds biologically unavailable unless delivered in organic solution to model systems. We have synthesized novel disodium salt disuccinate astaxanthin derivatives that possess high aqueous dispersibility. When delivered to mouse embryonic fibroblast C3H/10T1/2 cell cultures, either in aqueous or aqueous/ethanol solutions, these derivatives are biologically active. Biological activity was demonstrated by (1) upregulated expression of connexin 43 (Cx43) protein; (2) increased formation of Cx43 immunoreactive plaques in regions of the plasma membrane consistent with localization of gap junctions; (3) significantly upregulated gap junctional intercellular communication (GJIC) as demonstrated by Lucifer Yellow dye transfer after microinjection ($P < 0.03$; Fisher's Exact test). Enhanced expression of Cx43 and increased GJIC have been previously demonstrated to result in inhibition of in vitro neoplastic transformation of 10T1/2 cells as well as growth reduction of human tumors in xenografts. These novel derivatives possess increased utility as water soluble and water dispersible agents, allowing for aqueous delivery both in vitro and in vivo, properties that could enhance their potential clinical utility as potent cancer chemopreventive agents.

L32 ANSWER 20 OF 21 MEDLINE on STN DUPLICATE 6
ACCESSION NUMBER: 2003190893 MEDLINE

DOCUMENT NUMBER: PubMed ID: 12661077
TITLE: Improved aqueous solubility of crystalline astaxanthin (3,3'-dihydroxy-beta, beta-**carotene**-4,4'-dione) by Captisol (sulfobutyl ether beta-cyclodextrin).
AUTHOR: Lockwood Samuel F; **O'Malley Sean**; Mosher Gerold L
CORPORATE SOURCE: Hawaii Biotech, Inc., 99-193 Aiea Heights Drive, Suite 200, Aiea, Hawaii 96701, USA.. slockwood@hibiotech.com
SOURCE: Journal of pharmaceutical sciences, (2003 Apr) 92 (4) 922-6.
Journal code: 2985195R. ISSN: 0022-3549.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200311
ENTRY DATE: Entered STN: 20030425
Last Updated on STN: 20031217
Entered Medline: 20031120

AB **Carotenoids** are the most widely distributed natural pigments, with over 600 individual compounds identified and characterized from natural sources. A few are commercially important molecules, having found utility as additions to animal feed in the aquaculture, poultry, and swine feed industries. The majority are lipophilic molecules with near zero inherent aqueous solubility. Many different methods have been developed to make the **carotenoids** "water dispersible," as true water solubility has not been described. Astaxanthin (3,3'-dihydroxy-beta, beta-**carotene**-4,4'-dione) is a commercially important oxygenated **carotenoid** that has gained wide acceptance as a feed additive in the $50 billion salmon and trout aquaculture industry. Recently, interest in the human health applications of astaxanthin has increased, with astaxanthin receiving approval as a dietary supplement in several countries, including the United States. Moving astaxanthin into a pharmaceutical application will require a chemical delivery system that overcomes the problems with parenteral administration of a highly lipophilic, low molecular weight compound. In the current study, the ability of sulfobutyl ether beta-cyclodextrin (sodium), as the Captisol(R) brand, to increase the aqueous water solubility of crystalline astaxanthin was evaluated. Complexation of crystalline astaxanthin with Captisol increased the apparent water solubility of crystalline astaxanthin approximately 71-fold, to a concentration in the 2 microg/mL range. It is unlikely that this increase in solubility will result in a pharmaceutically acceptable chemical delivery system for humans. However, the increased aqueous solubility of crystalline astaxanthin to the range achieved in the current study will likely find utility in the introduction of crystalline astaxanthin into mammalian cell culture systems that have previously been dependent upon liposomes, or toxic organic solvents, for the introduction of **carotenoids** into aqueous solution.
 J Pharm Sci 92: 922-926, 2003

L32 ANSWER 21 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1935:48497 CAPLUS
DOCUMENT NUMBER: 29:48497
ORIGINAL REFERENCE NO.: 29:6314a-c
TITLE: The lipochromes of sea anemones. I. **Carotenoid** pigments of Actinia equina, Anemonia sulcata, Actinoloba dianthus and Tealia felina
AUTHOR(S): Heilbron, I. M.; **Jackson, Harold**; Jones, Richard N.
SOURCE: Biochemical Journal (1935), 29, 1384-8

Prepared by: Mary Hale @2-2507 Rem Bldg 1D86

CODEN: BIJOAK; ISSN: 0264-6021
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB The anemones were minced and extracted with Et2O-Me2CO (1:1). The exts. were evaporated, diluted with H2O and extracted in petroleum (40-60°) from which the phosphatides and sterols were removed by precipitation with Me2CO and cooling.

The extract was transferred to petroleum and adsorbed on alumina or Ca (OH)2 (in some cases it was partitioned with aqueous MeOH first). Actinioerythrin (I) was found in Actinia equina. I, a **carotenoid** ester, on hydrolysis gave a new pigment, violerythrin (II), m. 191-2°, and having absorption maximum (in CS2) at 625, 576 and 540 mμ. Actinoloba dianthus contained an esterified **carotenoid** which was hydrolyzed to an acid m. 195-6° (absorption maximum near 495 mμ). Tealia felina gave two pigments, one possibly I. The other on hydrolysis gave an acid m. 205-8° (absorption maximum at 500 mμ in CS2). Anemonia sulcata contained no esterified pigments, the main lipochrome being sulcatoxanthin, probably C40H52O8, which possessed absorption maxima at 516, 482 and 450 mμ in CS2. Chlorophyll-a was also isolated from Anemonia sulcata.

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(FILE 'HOME' ENTERED AT 07:29:01 ON 24 JUN 2005)

FILE 'REGISTRY' ENTERED AT 07:29:20 ON 24 JUN 2005
E CAROTENOID ESTER/CN 5
E CAROTENOID/CN 5
L1 STR
L2 0 S L1
L3 0 S L1 FUL
L4 STR L1
L5 0 S L4
L6 0 S L4 FUL
L7 STR L4
L8 0 S L7
L9 5 S L7 FUL

FILE 'CAPLUS' ENTERED AT 07:37:54 ON 24 JUN 2005
L10 3 S L9
L11 2474 S (CAROTENE OR CAROTENOID) AND (LIVER OR HEPATITIS OR HEPATIC?
L12 76 S L11(5A)(DISEASE OR DYSFUNCT?) AND (INHIBIT? OR AMELIOR?)
L13 60 S L12 AND (TREAT? OR THERAP? OR PREVENT?)
L14 60 S L13 NOT L10
L15 94 S FOURNIER S?/AU
L16 142 S "O'MALLEY" S?/AU
L17 14 S WATUMULL D?/AU
L18 19 S HIX L?/AU
L19 1118 S JACKSON H?/AU
L20 16 S NADOLSKI G?/AU
L21 0 S L15 AND L16 AND L17 AND L18 AND L19 AND L20

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L22 0 FILE MEDLINE
L23 0 FILE BIOSIS
L24 0 FILE EMBASE
L25 0 FILE CAPLUS
TOTAL FOR ALL FILES
L26 0 S L15 AND L16 AND L17 AND L18 AND L19 AND L20

Prepared by: Mary Hale @2-2507 Rem Bldg 1D86

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L27             6 FILE MEDLINE
L28             5 FILE BIOSIS
L29             6 FILE EMBASE
L30            21 FILE CAPLUS
     TOTAL FOR ALL FILES
L31            38 S (L15 OR L16 OR L17 OR L18 OR L19 OR L20) AND (?CAROTENE? OR ?
L32            21 DUP REM L31 (17 DUPLICATES REMOVED)

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273-6048
Atn Steve, Foreign Patent

A11

I need the patent of this appl.?

1/14/2005

EP1474388

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
14 August 2003 (14.08.2003)

PCT

(10) International Publication Number
WO 03/066583 A1

(51) International Patent Classification[7]: C07C 403/24, C07D 213/80, 307/68, 333/24, A23K 1/16, 1/18, A23L 1/275

(21) International Application Number: PCT/EP03/00873

(22) International Filing Date: 29 January 2003 (29.01.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
02002728.0 6 February 2002 (06.02.2002) EP

(71) Applicant *(for all designated States except US)*: **ROCHE VITAMINS AG** [CH/CH]; 124 Grenzacherstrasse, CH-4070 Basle (CH).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **GLOOR, Arnold** [CH/CH]; Delsbergerallee 52, CH-4053 Basel (CH). **SIMON, Werner** [CH/CH]; Fuerfelderstrasse 43, CH-4125 Riehen (CH).

(74) Agent: **MUELLER, Ingrid**; 124 Grenzacherstrasse, CH-4070 Basle (CH).

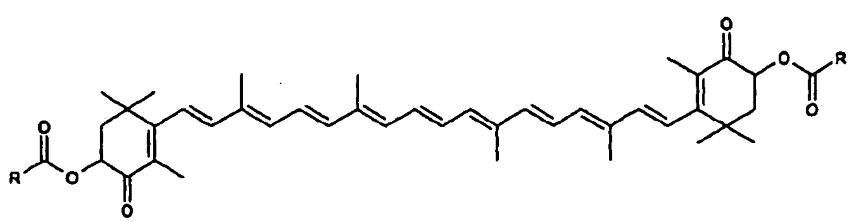
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ASTAXANTHIN ESTERS



(1)

(57) Abstract: Astaxanthin derivatives of the general formula (I) wherein R is in each case group -NH-CH(R^1)-COOR^2, -OR^3 or -(Y)$_n$-Z and R^1, R^2, R^3, Y, Z and n are significances given in detail in the description, are novel compounds with improved stability during extrusion at the elevated temperatures as required in feed manufacture and during the storage of the manufactured feed and which accordingly are useful as pigmenting carotinoids for feed for aquatic animals. The derivatives are produced by reacting astaxanthin with the pertinent acid RCOOH as such or as its acid chloride RCOCl or acid anhydride $(RCO)_2O$, or, in the cases where R signifies a group -NH-CH(R^1)-COOR^2, with the appropriate N-carbonyl-amino acid ester of the formula OCNCH(R^1)COOR^2. The invention also concerns a formulation containing such an astaxanthin derivative as the pigmenting carotenoid for use in a feed for aquatic animals, a process for producing such a formulation by dissolving the astaxanthin derivative in a plant or vegetable oil or fat, or in an organic solvent, or in a mixture of both a plant or vegetable oil or fat and an organic solvent, emulsifying the solution with an aqueous solution of a protective colloid, at least partially removing the solvent and water to afford a concentrated emulsion, and spray-drying the concentrated emulsion to finally produce a formulation suitable for incorporation in a feed for aquatic animals, and a feed for aquatic animals containing such a pigmenting carotenoid.

WO 03/066583 A1

(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Veröffentlichungsnummer:
(11) Publication number:
(11) Numéro de publication:

EP 1 474 388 A0

pd 11.4.2004
1 page.

Internationale Anmeldung veröffentlicht durch die Weltorganisation für geistiges Eigentum unter der Nummer:

WO 03/066583 (art. 158 des EPÜ).

International application published by the World Intellectual Property Organisation under number:

WO 03/066583 (art. 158 of the EPC).

Demande internationale publiée par l'Organisation Mondiale de la Propriété sous le numéro:

WO 03/066583 (art. 158 de la CBE).